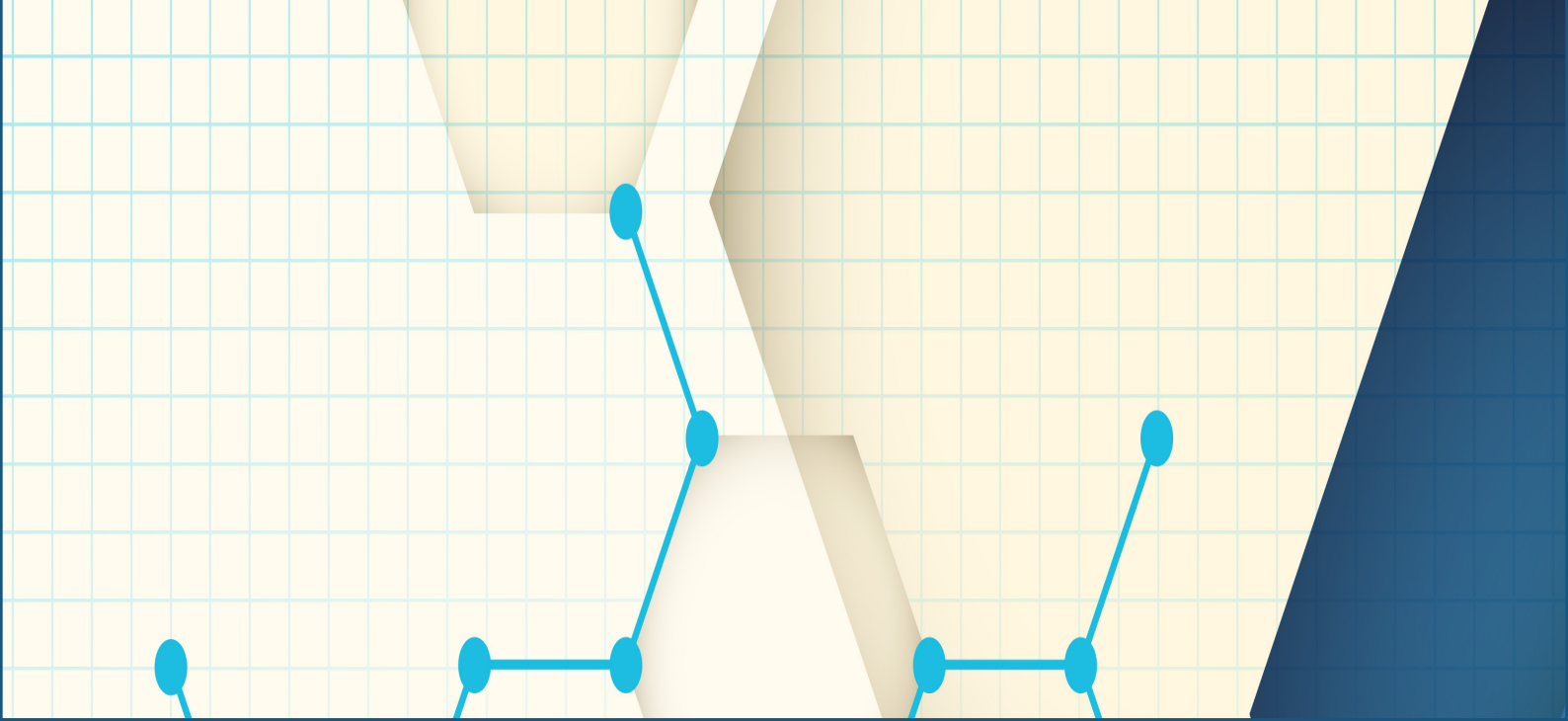
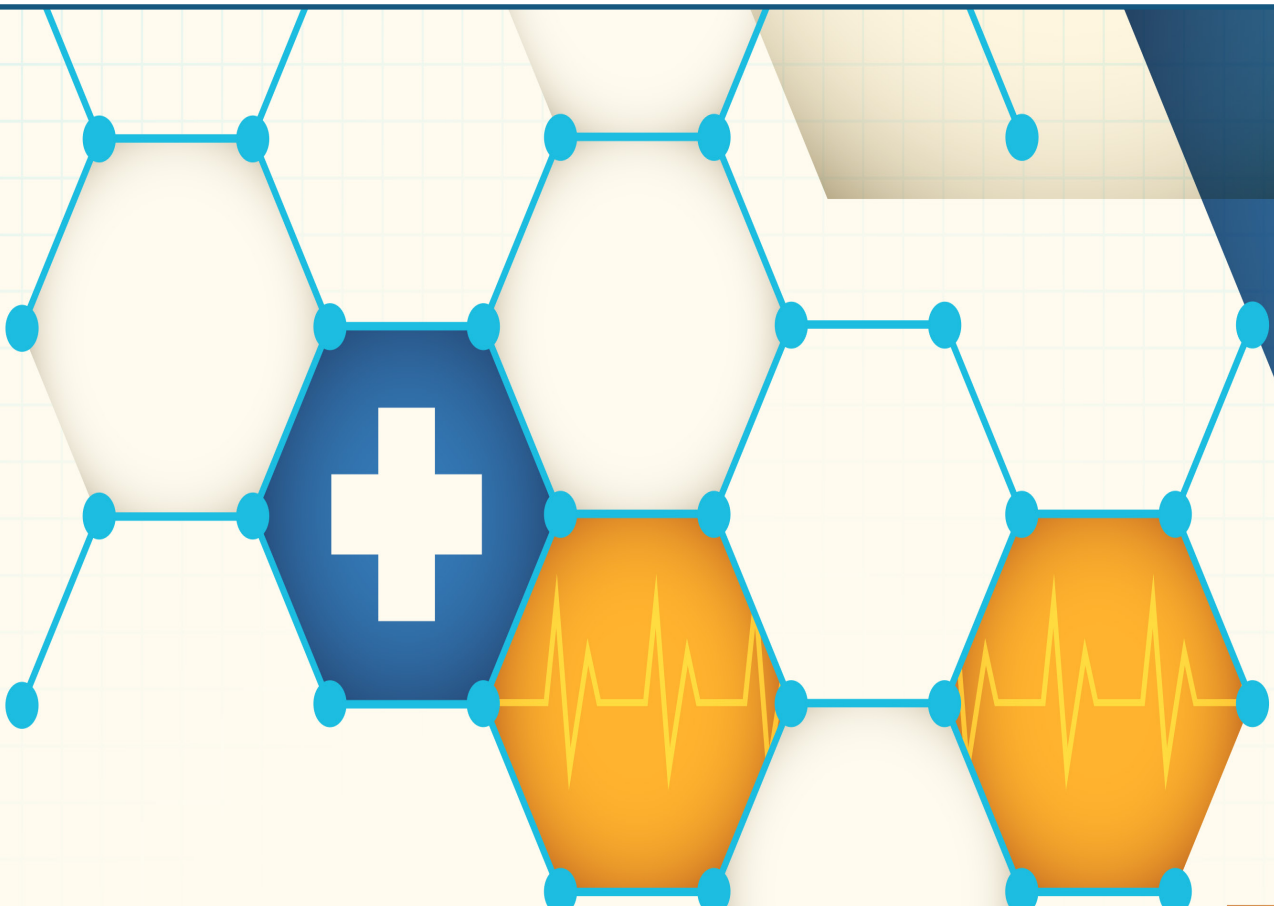




Focus Clinical Notes



General Examination



VISIT...

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بسم الله الرحمن الرحيم

يقول الله تعالى في كتابه الكريم ” إنا نحن نحيي ونميت ونكتب ما قدموا وأثأرهم وكل شئ
أحصيناه في إمام مبین“

صدق الله العظيم

ولهذا الأمر حرص فريق العمل على تقديم أقصى درجات الافادة في عمل هذه المذكرة وتم
الاعتماد في جمع المعلومات من مختلف المصادر:

1- تفريغ محاضرات ال General ل د. أشرف زكى 2016 ” بشكل رئيسى ”

2- كتاب العمل ل د. محمود علام

3- كتاب العمل ل د. محمود سويلم

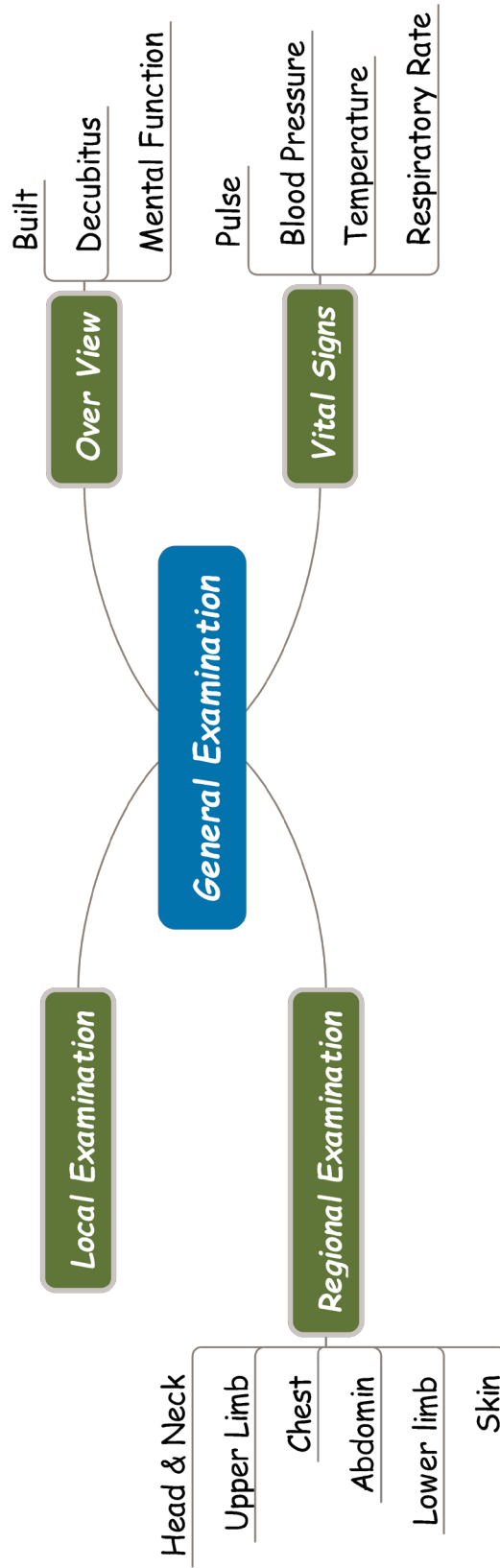
4- بعض الصور التوضيحية من الانترنت

فريق العمل

طبع الازهر - دفعة 2018

2016

الإصدار الأول



Scheme of General Examination

Built

1- Height	2- Weight
Average	Average
	- For men = height - 100 - For women = height - 105 - For girls = height - 110 بالمقاسات العالمية وليس بمقاسات المحشى
Gigantism	Overweight
Types of Gigantism: 1- Familial or Racial: Span = Height 2- Pituitary: (Acromegaly): Disproportionate --- "lower segment > upper segment .. span > Height" 3- Marfan's Syndrome: characterized by : tall , arachnodactyly وعنكبوتية وطويلة , high arched palate, subluxation and dislocation of the eye lens & Aortic Regurge.	Causes of overweight: 1 - Simple Obesity. 2- Cushing Syndrome: central fat distribution, Buffalo body, moon face. 3- Others: Edema, Ascites, Body Builders
Dwarfism	Underweight
Types of Dwarfism: 1- Familial or Racial. 2- Pituitary: Proportionate بتفرق مابينه وبين ال familial. by history 3- Other Causes: see Endocrinology.	Cause of underweight: 1- Cachexia (جلد على عظم), in malignancy due to cachexin release from tumor 2- Imatiation لحم على جلد no fat (لهزال) In anorexia, toxemia, starvation, malabsorption, DM, thyrotoxicosis

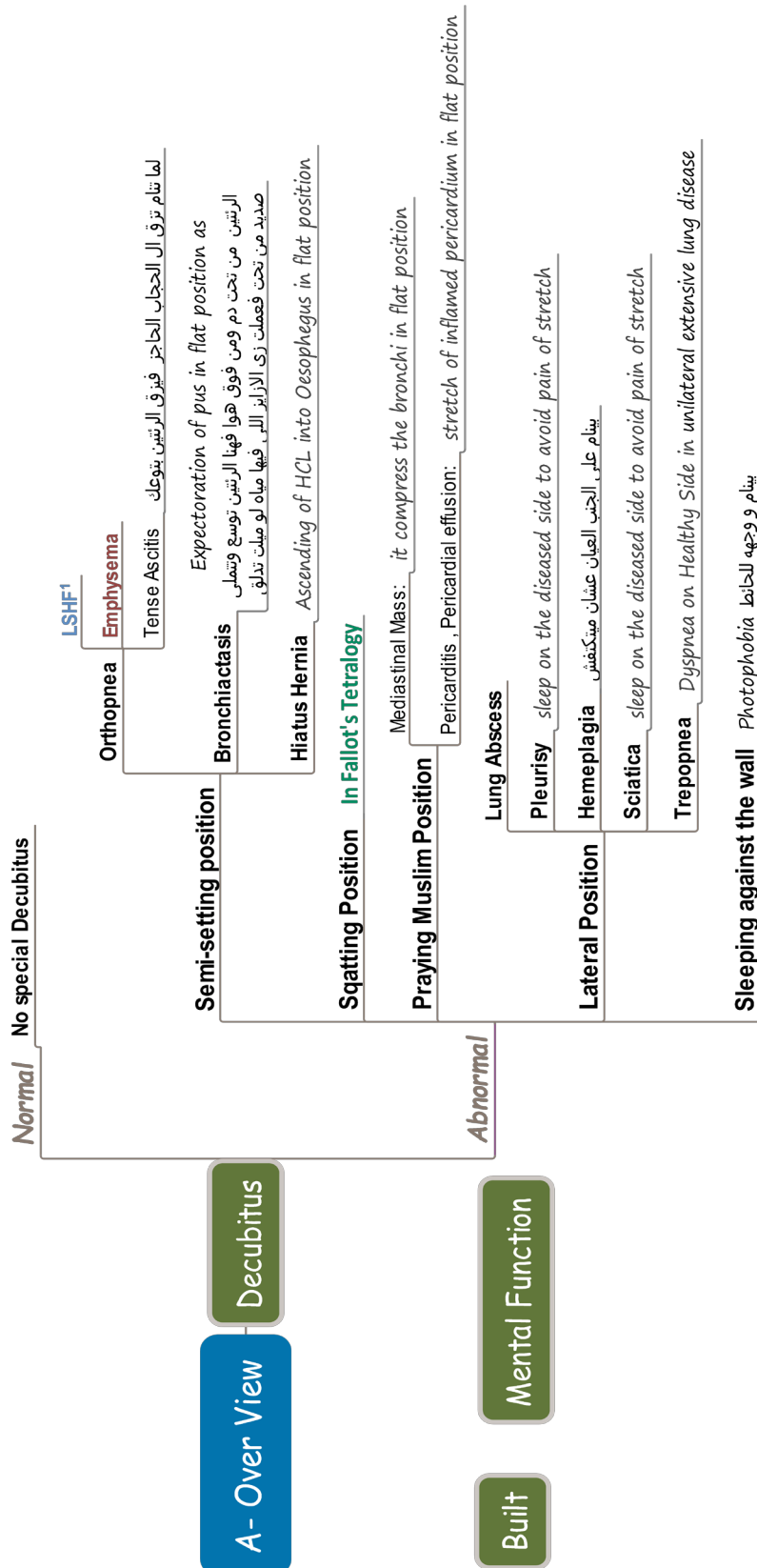
3- Body Mass Index

{BMI= Weight / (Height)²}
 الوزن بالكيلو جرام على مربع الطول بالمتر

18 - Normal
 <18 Under Weight
 25 - 29 Over weight
 30 - 39 **Obesity**
 40 or more Morbid Obesity

N.B / Obesity : تقدر تعرفها عن طريق :

- Sunken Umbilicus
- Thick skin folds .
- History Of over nutrition
- Family History



- Normally in flat position the lung V has the ability to Expand. so it can accommodate the increase in VR related to flat position .

- on LSHF there is pulm cogest so the lung can't accommodate for the increase of VR related to flat position

it cause loss of elastic recoil. so patient like to sleep free to avoid restriction and by cause of rupture of intra-alveolar septum so no diffusion and perfusion that lead to emphysematous bullae that if it comes apical, dyspnea will occur in flat position as the blood ascend to the diseased area

there is Rt ventricular hypertrophy + VSD. so, the non-oxygenated blood rush from the RV to Aorta to the systemic circulation that lead to cyanosis. VD would worsen the condition as peripheral resistance so aortic pressure decrease so shunt from RT to LT increase so cyanosis increase and hypoxia of brain cause syncope. so in squatting position, compress on femoral and splanching vessel to increase resistance and aortic pressure increase so shunt decrease and oxygenation increase.

Mental Function

1- Consciousness:

** Drowsy:

- a- Hysterical
- b- Organic:
 - **intracranial cause** presence of sign of lateralization
 - **extracranial cause** no sign of lateralization

** Deep Coma

** Full consciousness

2- Intelligence

3- Orientation

4- Behavior (cooperative)

5- Mood:

- a- Depression
- b- Euphoria

6- Memory

- a- **Retrograde amnesia** بينسى الاحداث القديمه
- b- **Antrograde** بينسى الجديد ويفتكر القديم
- c- **Circumscribed global transient** بينسى حدث معين ويفتكر الباقي كله وبعد شويه يفتكره ببيجي مع emotional stress ال

Glasgow Coma Scale		
Behavior	Response	Score
Eye Opening response	Spontaneously	4
	To speech	3
	To pain	2
	No response	1
Best Verbal response	Oriented (know place and time person)	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	No response	1
Best Motor Response	Obeys commands	6
	Moves to localized pain	5
	Withdrawal from pain	4
	Abnormal flexion (decorticate)	3
	Abnormal Extension (decerebrate)	2
	No Response	1
Total Score	Best Response	15
	Comatose: Mild	>13
	Moderate	8-12
	Severe	<8
	Totally unresponsive	3

In case of normal overview state:

The patient is average in build and lies comfortable in bed in the dorsal recumbent position he is fully conscious cooperative oriented to time and place and person with good memory and mood and of an average intelligence.

Pulse

We will talk about 7 items:

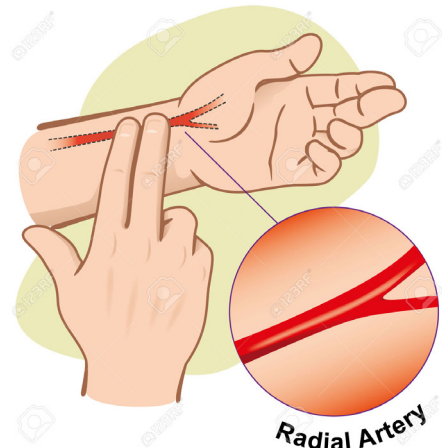
Rhythm, Rate, Volume, Equality, Special Characters, Conditions of the Arterial wall & Peripheral Pulsation

وإذا الدكتور سالك واية كمان ؟

Others: Force, Tension, Sounds, Murmurs & Thrills

Technique of radial artery pulsation

Lateral to tendon of flexor carpi radialis and compress against head of radius by middle 3 fingertips with support by thumb use moderate compression with wrist slightly flexed slightly pronated forearm



1] Rhythm:

A - Regular Pulse.

B - Irregular Pulse: (2 types)

a - Regular Irregularity: (2 causes)

1- Monofocal Premature beats

كل ما يحصل activation of heart بيبقى فيه

- Absolute refractory period impulse تطلع في الوقت ده القلب ميستجيبش
- Relative refractory impulse قويه ممكن يستجيب لو ال

When presence ectopic focus

ممكن يستجيب لها القلب لو impulse قوية أثناء Relative refractory والمشكلة ان هي كمان لها

Absolute refractory period and Relative refractory

لما تيجي SA node اللى بعدها تضرب هتضرب في Absolute refractory period بتاعه ال Ectopic

فتتلغى فكه كانك شلت واحده وحطيت بدلها واحده فسموها extra systole

فكان دي هي بس جات بدرى عن معادها فيسموها premature beat

فلو نفس ال Focus كل مره هي اللى بتطلع وهي لها rhythm منتظم فتطلع بعد كل عدد ثابت من

النبضات الطبيعى فمثلا (trigemini) -sinus -sinus -premature -pause

الضربة اللى بعد ال pause كبيره لانها خدت وقت كبير فملت دم اكثر واللى قبله صغيره لانها premature

فكان في short cycle

e.g: Pulsus bigemini(1-2-pause), trigemini or quadrigemini.

بس المفروض ان ال SANode اسرع فتلغى الابطى ليه بقى ملغتهاش لانها
protected from SANode beats by zone of uni direction block .

Q / ايه اللى يعملها ال zone دي ؟

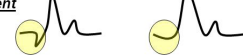
>> Digitalis Toxicity

Premature Complexes

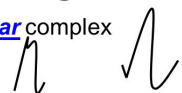
- **PAC**- premature **Atrial** complex
- P wave upright in front of QRS



- **PJC**- premature **Junctional** complex
- P wave is inverted or absent



- **PVC**- premature **Ventricular** complex
- Wide and bizarre, No "P" wave



2- Second Degree Atrio-Ventricular Block:

ال AVNode بتعدى شوية impulses وتحجب شوية على فترات منتظمة

Q / ايه اللي يعمل 2nd degree heart block ؟

برده Digitalis Toxicity وفى اسباب تانيه بس هو اشهرهم

b - Irregular Irregularity: (2 types)

- **Marked:** as A.F اذا مقدرتش تعد 4 نبضات متتالية منتظمة
- **Occasional:** as Multiple Extrasystoles اذا قدرت تعد 4 نبضات متتالية منتظمة

N.B / Any Irregular pulse /cardiac cycle become variable, so diastolic time become variable, so filling is variable, so stroke volume become variable and pulse volume.

عشان كده الضربات الضعيفه ساعات متوصلش لل Radial

Cause pulse deficit. (HR –pulse rate) in 1minute.

if pulse deficit > 10 case is A.F

if pulse deficit < 10 case is Extrasystole

(د/أشرف ذكى : هذا الكلام فارغ ولازم رسم قلب لتشخيص ال *arrhythmia* بس اذا اتسالت فيها قول الاجابة السابقة واذا سالوك على المرجع بتاعك قول قالوهالنا فى الراوند)

DD of AF & Extrasystole		
	AF	Extrasystole
Rate	Rapid 120-150/min Rare slow AF	Normal
Rhythm	Marked irregularity (can't count 4 regular beats)	Occasional irregularity (can count 4 regular beats)
Pulse deficit	> 10 /min	< 10/min
1 st sound	variable	Normal with occasional irregularity
JVP	Absent a wave	Normal with occasional irregularity
Exercise	Increase irregularity	Decrease irregularity
ECG	Absent a wave Irregular QRS	Early QRS complex Followed by compensatory pause

2] Rate: Normal, Tachycardia or Bradycardia.

- **Normal:** 60 - 99 beat/min (under complete physical & mental rest ..
- **Tachycardia:** = 100 / >100 beat/min لازم اكثر من 100 حتى لو الطبيعي بتاعه 60 بس
- **Bradycardia:** < 60 beat/min لازم اقل من 60 حتى لو الطبيعي بتاعه 99

N.B /

- * **If pulse is regular you may count in 30 sec and multiply by 2 , or count in 15 sec and multiply by 4 ..**
- * **If pulse is irregular or there is Bradycardia, you must count in 60 sec.**

Oral اسئلة شفوى

Q / Causes of Sinus Tachycardia ?

(Sinus means = Pace maker is SANode)

- 1 - Exercise .
- 2 - Emotional Stress .
- 3 - Sympathomimetic .
- 4 - Parasympatholytics .
- 5 - Heart Failure .
- 6 - Fever : every 1c increase in temperature lead to 10 - 15 raise in Heart rate ...
except in carditis H.R increase more than 15 for every 1c degree .

Q / Causes of Sinus Bradycardia?

- 1 - During Sleep .
- 2 - Athletics لاعبي الرياضة
- 3 - Sympatholytic
- 4 - Parasympathomimetic
- 5 - **Obstructive Jaundice !?** **ليه؟**

Increase bile salts concentration in the blood lead to effect on prostaglandin metabolism lead to decrease HR **"Bile salt cause inhibition of SAN"**

3] Volume: (Systole P. - Diastole P.) قوه النبض

N.B :

- * المتحكم فى ال **Systolic Blood Pressure** هو ال **Stroke Volume** ... تناسب طردى .
- * المتحكم فى ال **Diastolic Blood Pressure** هي ال **Peripheral Resistance** تناسب طردى .
- Diastolic Blood Pressure** اللى بيعبر عن الدم المتبقى فى الشريان بعد هروب الدم لل **Tissue**
VD (decrease in Peripheral Resistance and increase blood escape to tissue)

types: Average, Big, Small or Variable.

1 / Average: 20 - 60 mmHg.

2 / Big Pulse Volume:

causes: diastolic ال نقص او systolic ال زياده

او زياده الاتنين بس ال Systolic اكثر
او زياده ال Systole ونقص ال Diastole
النبضه عباره عن النفخه ال بتيجي نتيجة الفرق مابين ال systolic and diastolic diameter
عشان كده بيسموه pulse pressure
زياده الاتنين بس ال Systolic اكثر فى ال systemic hypertension

Causes of Big Pulse Volume

A	B	C	D
Aortic Regurge لان الدم المتبقى يرجع للقلب تانى وكمان الحبه اللي رجعوه القلب هيزوده ال SV فلما يزيد VD عشان يستوعب الزيادة يحصل Anemia due to increase stroke volume and blood scape rapidly and vasodilation (بدل مالدن كان عسل) بقى مياه Aortic Atherosclerosis اما بتسحب الدم منه مبهيوش فى ال DP يقل ما اثناء ضخ الدم بيضخ بصعوبه فال SP يزيد A-V fistula (الدم المتبقى هيروح لل V) لما ال VR يزيد ال SV يزيد كمان	Bradycardia (Diastolic time increase so blood escape increase and filling increase so stroke V increase) Beriberi - Vit b1 deficiency > Lactic acid accumulation > Vasodilatation . - Also , Vit b1 is necessary for the health of capillaries. Paget's disease due to presence of increase osteo- clastic activity healed by granula- tion tissue lead to Increase number of capillaries فالدم المتبقى فى الشريان هيروح لها PDA Pregnancy V.D. & Increase number of capillar- ies.	Thyrotoxi- cosis by increase stroke volume.	Dilators (Vasodilators, Hypoxia, Liv- er Cirrhosis)

3 / Small Pulse Volume: causes:

A: Small stroke volume: low cardiac output.

B: Shock: Thready pulse, weak and rapid.

C: Tachycardia, Constrictive Pericarditis, Pericardial effusion, Restrictive cardiomyopathy >
 By decrease filling

D: Cardiomyopathy, Myocarditis, Myocardial infarction, Intracardiac obstruction. > By decrease pump-
 ing

E: Heart failure, Peripheral vascular disease > by increase peripheral resistance

F: Arteritis thrombus in artery

4 / Variable Volume: Causes: any irregular rhythm as A.F

Regular rhythm in

D: Pulsus Alternans:

ضربة عاديه وضربة ضعيفة

E: Pulsus Paradoxus:

(4 ضربات قوية مع ال expiration)

(4 ضربات ضعيفة مع ال inspiration)

Q / ايه اللي يعمل Unequal Pulse Rate ؟

ج / - Unequality Of Pulse Volume او واحد عنده احد اسباب ال variable volume السابقة .

Q/هل ممكن ال pulse يكون regular ومع ذلك يكون variable volume ؟

ج / نعم .. مع ال pulsus alternans & pulsus paradoxus .

4] Equality: Both radial arteries must be examined at the same time .

Causes of unequal pulse volume: Subclavian artery is obstructed on one side.

From outside	From Inside	In the Lumen
- Cervical Rib. - Cervical Lymph node. - Pancoast tumour: bronchogenic carcinoma present in the apex of the Lung.	- Coarctation of Aorta. - Aneurysm of arch of Aorta. - Aneurysm of Subclavian artery. - Arteritis.	- Thrombosis. - Embolism.

Unequality pulse rate in causes of unequal pulse volume in presence of variable volume

Q / لو وضعت ايد على ال **radial a** وايد على ال **femoral a** مين اللي بيسبق فيهم ؟ وليه ؟

ج / ال Femoral اللي بيسبق لانه direct from Aorta

Q / امتي ال **radial** هو اللي يسبق ؟ (Lack)

ج / لو فيه Obstruction في ال Abdomen

ويسمى : Radio-Femoral Lag

5] Special Characters:

3 اساسية : Water hammer pulse , Pulsus Parvus et tardus , Pulsus Bisferiens

وايه كمان ؟ Pulsus Paradoxus , Pulsus Alternans & Pulsus deficit

وايه كمان ؟ Pulsus bigeminy & trigeminy

1 - Water Hammer Pulse	sharp ascending and sharp descending with high amplitude (160/50) Causes: cause of Big Pulse Volume .
2 - Pulsus Parvus et tardus	Slow ascending, Slow descending, Sustained, Weak, low amplitude. Causes: Aortic Stenosis لانه بيفتح ببطئ وبالتدريج وياخد وقت اطول لان الدم بيطلع ببطئ ولو حاله سيئه اوى مش هيطلع دم كثير وهيقي النبض ضعيف B-blocker therapy, L.V.F. اسماء تانية ليه : Anacrotic, Plateau, Flat 
3 - Pulsus Bisferiens	Bifid = double hump. Best seen and felt at Carotid Artery. Causes: • Double Aortic Lesions (stenosis + regurge) • Sever Aortic Regurge (functional stenosis بيبقى معاه) • Hypertrophic obstructive cardiomyopathy (septum is thick) فالد ميعرفش يخرج من ال Obstruction تاني حاجة contraction against resistance so pressure increase suddenly and overcome obstruction فالد يخرج مره تانيه يبقى اول هامب والسكه مفتوحه وبعدين تتقفل تاني هامب لما يتغلب على القفل اللي حصل

4 - Pulsus Paradoxus

Regular rhythm with Variable volume.

(4 ضربات قوية مع ال expiration)

(4 ضربات ضعيفة مع ال inspiration)

Causes: Constrictive Pericarditis, Pericardial effusion, COPD, Sever CHF

Mechanism

VR=5 > so what goes to vein is 5 > 5 to lung > 5 back to Heart again. **in INSPIRATION** the VR= 8 > so it's supposed to 8 goes to lung then back to heart, But actually

ان ده ميحصلش لان

Lung is expand so accommodate 4 from 8

فيرجع للقلب 4 بس فقوة النبض تقل ده اللي بيحصل طبيعي

In Constrictive Pericarditis , Pericardial effusion

بيضغطوا على RV اكتر من ال Lt V لانه ارفع

So compressed RV accommodate 8 by deviation of septum so capacity of LV decrease

كده ال 4 تنزل 2 كده قوة النبض تقل زياده

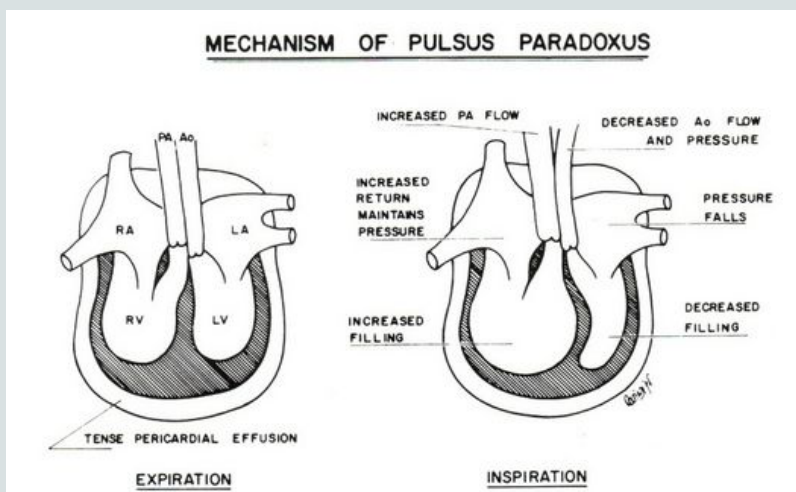
الطبيعي ان النبض بيضعف اثناء الشهيق وبالتالي اسم **paradoxus** غلط لان اللي بيحصل هو زيادة للطبيعي

وليس عكس الطبيعي .. والاسم الصحيح **Pulsus Accentus**

In COPD because of increase force of inspiration so lung accommodate 6 from 8

كده ينزل 2 بس لل Lt

ازاي تعرفه ؟ تقيس الضغط اثناء الشهيق ثم اثناء الزفير تجد الفرق في الضغط اكبر من 10mmHg



5 - Pulsus Alternans

Regular rhythm with Variable volume . نبضة قوية ونبضة ضعيفة والمسافات بينهم متساوية .

ليه ؟

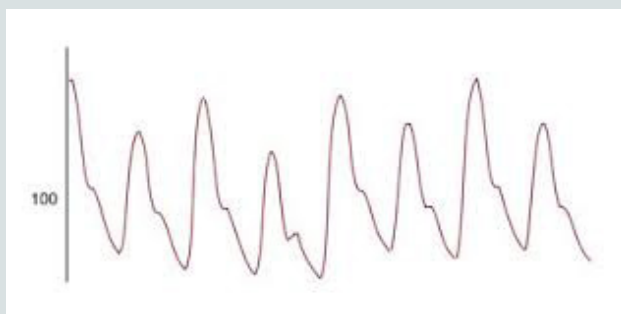
الضربة القوية بتكون ب

الضربة الضعيفة بتكون all cardiac muscles except diseased ones that stills in refractory period

ازاي تعرفه ؟

بجهاز الضغط .. ارفع لل systole وعد النبضات وبعد كذا فك جهاز الضغط وعد النبضات تاني .. هتجد ان عدد الضربات زاد لان الضربات الضعيفة ظهرت بعد فك جهاز الضغط .

Causes: it is a diagnostic sign for Sever L.V.F but very rare



6 - Pulsus Deficit

(Apical pulse - Radial pulse)

ازای بیحصل ؟

إذا ال ventricle عمل contraction وهو فاضى النبضة لن تصل لل radial artery.

Causes:

- **A.F:** Pulse deficit > 10 beat/min
 - **Extrasystoles:** Pulse deficit < 10 beat/min
- . وزى ما قلنا سابقا الكلام دا فارغ ولازم رسم قلب للتشخيص

7 - Pulsus bigeminy**Rare**

ضربة قوية وضربة ضعيفة ثم compensatory pause

ليه ؟

ضربة من SANode وضربة من ال ectopic focus

الضربة الثانية بتكون ضعيفة لانها premature beat

وبعدها بيحصل absolute refractory period

Causes: See Regular Irregularity of Rhythm .. (Digitalis Toxicity)**8 - Pulsus trigeminy & quadrigeminy****Very Rare****Caused by:** - Multiple ectopic focus (multiple extra systole) .

- Dropped beats

(ملحوظة مهمة)

: اهم 3 هم :

- **Water hammer pulse:** with Aortic Regurge.
- **Pulsus Parvus et tardus:** with Aortic Stenosis.
- **Pulsus Bisferiens:** with Double Aorta.

6] Condition of the arterial Wall:

باستخدام 3 اصابع على ال radial artery وتعمل Rolling

Normally, the arterial wall is not felt .

امتى تحس بيه ؟

- **Atherosclerosis:** حبل- **Polyarteritis Nodosa:** nodules : كلاكيع**7] Peripheral Pulsations:****Dorsalis Pedis Artery:** lateral to tendon of extensor hallucis longus

ميغيش عن قياس ال post tibial pulsation

ازاي نحسه ؟

نضغطه against navicular bone

It is congenitally absent in 15 % of people

Q / ازاي تفرق بين ال **occluded** وال **congenital absent** ؟!

Occluded >> Unilateral with signs of ischemia (pallor, cyanosis, coldness)

Other peripheral arterial pulsations & capillary pulsation

Radial	Lateral to the tendon of flexor carpiradialis	
Brachial	At the elbow medial to the biceps tendon	
Subclavian	Pressing downward above the middle of clavicle.	
Carotid	Medial to the sternomastoid muscle At the level of cricoid cartilage Against the transverse process of 6th C. vertebrae.	(a)  (b) 
Femoral	Medial to the sternomastoid muscle At the level of cricoid cartilage Against the transverse process of 6th C. vertebrae.	(c)  (d) 
Popliteal	Middle of the popliteal fossa while the patient lies supine with the knee slightly flexed.	(e)  (f) 
Posterior tibial	Behind the medial malleolus	(g) 
Dorsalis pedis	Lateral to the extensor hallucis longus tendon against navicular bone on the dorsum of the foot. In the 1st interosseous space (normally absent in 15% of population)	

8] Force:

Least Pressure needed to **occlude** the artery.
طريقة قديمة لقياس ال systolic pressure والعلاقة بينهم طردية
بتعلق عليه بدون ارقام : Low ,High ,Very high

10] Sounds:

لو وضعت السماعة على ال Femoral artery ممكن تسمع
Pistol Shot اسمها ضربة قوية
Peripheral Sign of Aortic Regurge ودى بتكون

9] Tension:

Pressure needed to **feel** the artery
طريقة قديمة لقياس ال diastolic pressure والعلاقة بينهم طردية
بتعلق ايضا بدون ارقام : Low ,High ,Very high

11] Murmurs: as Duroziez's sign

12] Thrills:

if it is felt on an artery it is called **SHUDDER**, as
Carotid Shudder

N.B / Digital Pulsation : (sign of Aortic Regurge)
- Press on the patient nail .. the redness in his nail bed will
pulse.

Blood pressure

تعليمات وانت بتقيس الضغط اول حاجة لازم تعرف ال Normal arterial blood pressure كام 60\100 الى اقل من 90\140 يعنى
 اقل من 60\100 يعتبر Hypotension واكثر من او يساوي 90\140 يسمى Elevated blood pressure
 Persistent elevation لازم يكون HYPERTENSION

Measurement of blood pressure

- 1\Palpatory method
- 2\Auscultatory method

Auscultatory method

بتسمع فيها ال Korotkoff sounds عبارة عن 5 Phases

- 1-Phase 1 Clear sounds (Fine) تمثل ال Systolic blood pressure
- 2-Phase 2 Murmur
- 3-Phase 3 Clear strong taps
- 4-Phase 4 Muffling
- 5-Phase Silence تمثل ال Diastolic blood pressure

بعض الناس ال **Normal** وبعض الناس ال **Hypertensive Markedly** وبعض الناس ال **Atherosclerotic**
Phase 2 لا يسمع فيعمل حاجة اسمها **Auscultatory gap** فيتطلع ال **systolic pressure** غلط علشان كذا لازم تقيس بال
Palpatory method الاول ليه **To Avoid Auscultatory gap**

Auscultatory gap: in high blood pressure a silent gap occurs during phase 1 & 2 with subsequent under-estimation of SBP & overestimation of DBP.

Technique for measuring ABP

Rules before measuring ABP:

a. The room: Quiet, Comfortably warm

b. Sphygmomanometer:

1. cuff bladder:

- a. Size: should be appropriate according to the limb circumference
- b. Avoid placing the chest piece of the stethoscope under the wrapped cuff.
- c. Avoid herniation of the bladder from its clothing.

2. The rubber tubing:

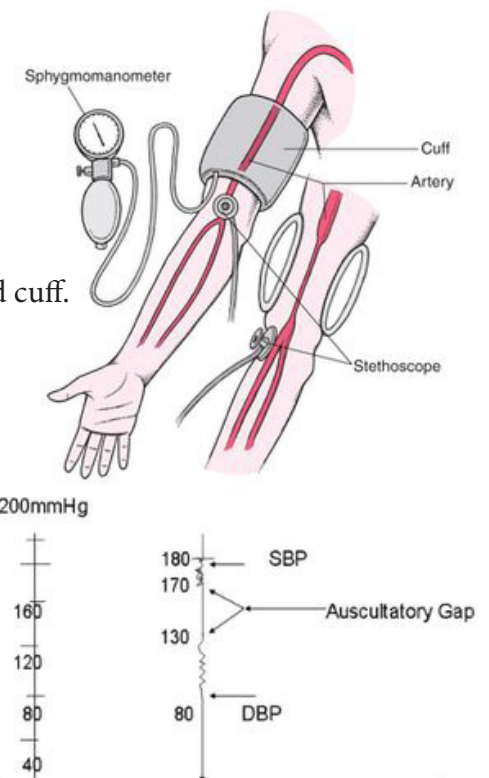
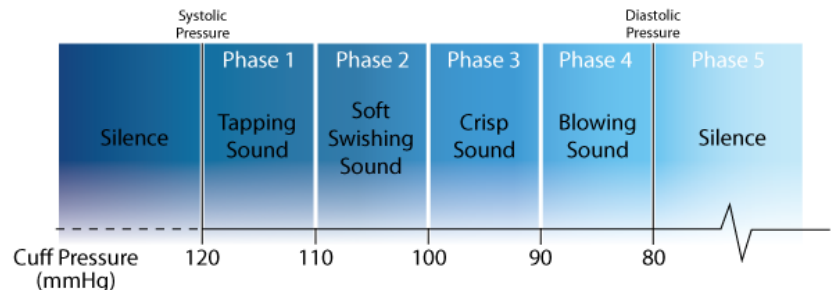
- a- Avoid their obstruction (kink or twisting)
- b- Avoid their leak.
- c- Should be sufficiently separated from each other.

3. The Manometer

Mercury reservoir

Should be ON

Should be at the same horizontal level with the heart



Mercury column:

Should be vertical

Should be secured from leak or obstruction

Mercury level should be at zero when the cuff is detached

c. The Examiner:

1. Sits in a comfortable position
2. Explain the procedure and reassures the patient
3. His eyes should be at the level of the mercury column

4. The patient:

- 1-Avoids exertion for 10 minutes
- 2-Avoids emotional stress for 5 minutes
- 3-Avoids smoking for 30 minutes- 2 hours
- 4-Avoids eating for 30 minutes (2 hours in elderly)
- 5-Avoids talking during the procedure
- 6-Avoids full bladder for 30 minutes
- 7-Position sitting or flat
- 8-**Patients arm:** -Should be supported -**Elbow:**-Slightly flexed -At the same level of the heart

ملاحظات

Blood pressure should be taken in **Right and Left arm**
normally may be a difference in pressure of **5-10 mmHg**. Right hand more than left hand

Blood Pressure

في الاول كده قبل ما نشوف ازاي نقيس الضغط في شوية principles لازم نفهمها هي طبعا مش مهمة للامتحان
انت لما تحط السماعة على شريان من غير جهاز الضغط ها تسمع صوت ؟
الاجابة لا!!!!!! لماذا؟ تعالوا نفهم الموضوع ماشي ازاي

1. لما يكون الدم ماشي في continuous blood flow او complete obstruction مش ها اسمع حاجة .
2. طيب امتي الصوت يظهر؟ لما يكون في partially obstruction.
3. يعني لو انا ضغط ضغطة اعلى من ال systole يبقى artery occluded during systole & diastole وبالتالي مش هسمع حاجة
4. ونفس الوضع لو الضغط بتاع ال cuff اقل من diastole هايكون عندنا continuous flow during systole, diastole ويرضوا مش هاسمع حاجة
5. اما لو الضغط اعلى من ال systole واقل من ال diastole هانسمع sudden tensing of arterial wall وهو ما يسمى kortkoff sound وخلي بالك ده استاذ قلب روسي
6. يعني الصوت هايفضل مسموع طول ما هو بين ال systole, diastole
7. احنا بنسمع ال systole in phase one وينسمع ال diastole عند phase 5

8. Phases of kortkoff sound

1. Clear and weak
2. Murmur
3. Clear and strong
4. Muffling
5. Disappear

نبدأ بقي ازاي نقيس الضغط ؟

قياس الضغط عبارة عن

1. RULES
2. STEPS

نبدأ ب القواعد RULES

سؤال القواعد دي لازم التزم بها للامتحان؟ الاجابة لا!!!!!!

لان فى حاجات انت مش بتقدر تتحكم بها بس لازم تتعلمها علشان تعرف تقيس الضغط صح لانك مطالب بارقام لو زد عنها تدى علاج

وهذه القواعد

1. The room
2. الجهاز
3. الدكتور اللي بيقىس الضغط
4. العيان.

1. The room quiet, comfortably warm
لان الدوشة تعالى الضغط والبرد بيطلع catecholamine's

2. Sphygmomanometre

1. القماشة اللي بنلفها على ذراع المريض وبداخلها Cuff bladder لازم يكون طولها 25سم وعرضها 12سم وده ال standard

طبيب لو الست تخينة شوية ومش عارف تلف ال cuff هتعمل ايه؟

- لازم ياباشا تكون جايب فى عيادتك ان شاء الله او يعنى معاك فى الجهاز اللي انت بتلف تقيس به للجيران cuff large size وواحد كمان للاطفال عالفكرة هما موجودين مع الجهاز الالمانى وينشترتهم الواحد ب 10 ج لو الجهاز بتاعك صينى او يابانى
2. ال cuff لازم يكون فوق مستوى ال cubital fossa by 3cm وخلي بالك ممنوع يبقى loose cuff لانه بيدى false high reading علشان لو كان loose يبقى الضغط اللي محتاجينه علشان نقفل الشريان اكبر من الضغط اللي المفروض نقفله
2. مش تضع السماعة تحت ال cuff
3. AVOID herniation of the bladder from its clothing.
4. The rubber tubes should be medially علشان يبقى ال brachial artery فى منتصف ال cuff

3. The physician

1. لازم يكون قاعد مستريح مش زى اللي بنشوفه فى الاستقبال
2. مستوى عينه على مستوى الزرق
3. Reassure the patient

4. The Patient

- لازم العيان يبقى مستريح يعنى نايم او قاعد ولازم يبقى دراعه supported
1. AVOID exertion for 10 min
 2. Avoid emotional stress for 5
 3. AVOID smoking 30 min
 4. Avoid full bladder 30 min
 5. ميكونش اكل لمدة نص ساعة.

Technique of measuring Blood Pressure

لو الدكتور طالب منك تقيس الضغط لازم تعمل الاتى

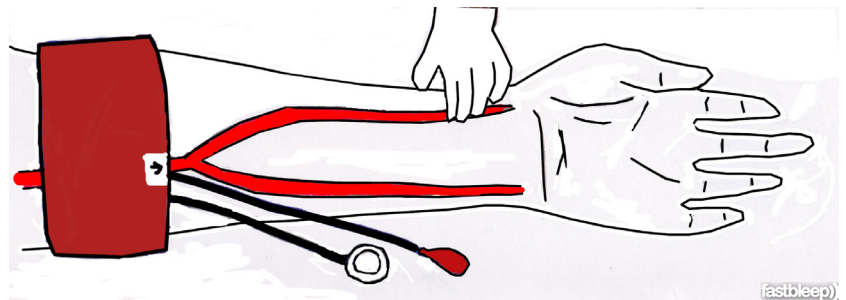
- 1/ Palpatory and Auscultatory
2. Rt & Lt
3. Upper limb and lower limb
4. flat and erect position

1. Palpatory method

Advantage avoid auscultatory gap
Disadvantage can't detect diastolic B.P

2. Auscultatory method

بعد كده نقارن اليمين بالشمال
طبعا القياس فى اليمين اعلى بحوالى اقل من 10 مم زئبق



3. Measure the LL

BLOOD PRESSURE in LL > UL by less than 20 mm Hg which is normal.

If BP in LL > UL by 60 mmHg it is called (Hill's sign) in AR.

If BP in UL > LL it is called (reversal of Hills) and occur in coarctation of aorta.

4. نقيس والعيان نايم مرة وهو واقف مرة علشان نشوف ال *postural hypotension*

Lastly

Uses of sphygmomanometer:

Diagnostic uses:

1. Measurement of arterial blood pressure.

- Hypertension.
- Hypotension.
- Pulse pressure (SBP-DBP).
- Mean arterial blood pressure (diastolic ABP + 1/3 pulse pressure).
- Equality of ABP.

2. Diagnosis of *pulsus alternans*.

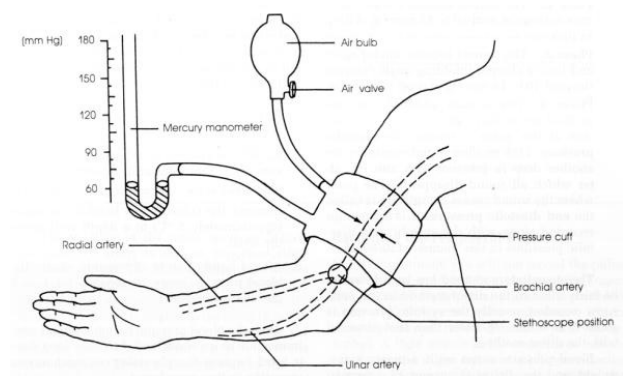
3. Diagnosis of *pulsus paradoxus*.

4. **Troussaut test:** to diagnose latent tetany.

5. **Hess test:** to diagnose thrombocytopenia.

6. **Walker test:** to diagnose myasthenia gravis.

7. **Lawnberg test:** to diagnose DVT.



Therapeutic uses:

1. As a tourniquet.

2. **Rotatory method (closed venesection):** for **ttt** of acute pulmonary edema.

Temperature

-Measurement

1. Sterilize the thermometer in 70% alcohol for at least 20 minutes
2. Shake the mercury down to 35°C using a snapping wrist motion then put it in .. For at least 3 minutes;

1. **The mouth** (from the side under the tongue with closed lip)

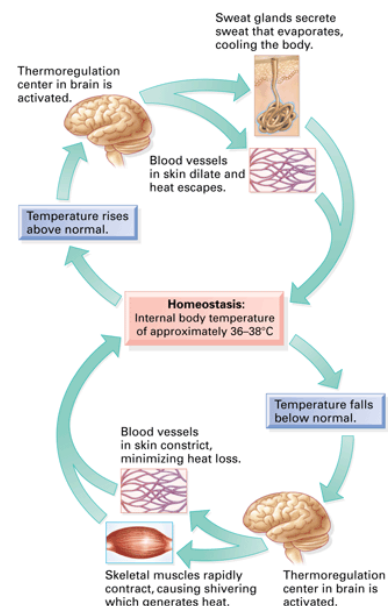
Normal oral temperature 36.5-37.2°C

2. **Axilla** Axillary temperature Add 0.5°C

3. **Rectum** (3-4 inches in the anal canal)

Anal temperature Subtract 0.5°C

اجمع فوق واطرح تحت



**What are the indications to measure the temperature per anus
=What are the conditions you cannot measure the temperature orally?**

1. Child
2. comatosed patient
3. Convulsions لان ممكن تجيله ال attack
3. Dyspnea & mouth breather
4. Vomiting
5. Cough
6. Hysterical

What are grades of fever ?

1. Fever (37.2 to 40 C)

Causes: Infection, Malignancy, Trauma, Hemolysis, Sun stroke, Collagen disease

2. Hyperpyrexia (more than 40 C)

Causes: Heat stroke, Hemolytic crisis, Thyrotoxic crisis, Pontine Hemorrhage
Encephalitis, Status Epilepticus

3. Temperature below 35 C is called Hypothermia.

4. Temperature from 36.5 to 35 C is called Subnormal temperature.

Causes of Hypothermia: Old Age, Damage of Anterior hypothalamus, Phenothiazine, Cold weather, Shock, Starvation, Myxedema

اعلي درجة حرارة ليك 9 مساء واقل درجة حرارة 6 صباحا

due to effect of counter regulatory hormone including cortisol which reaches
it's maximum level at night and minimum level at morning

- In **FEMALE** > Estrogen has same effect and the temperature rises also in the morning
in the child bearing period

What are types of fever?

1-Continuous

Description: Temperature is always high & daily fluctuations less than 1 C

Example: Typhoid, Meningitis, Lung abscess

2-Remittent

Description: Temperature is always high & daily fluctuations more than 1 C

مش بتوصل لل Normal

Example: Suppuration, Empyema, Pus under tension

3-Intermittent or Hectic

Description: Temperature falls to normal level once or more during the day

تعلي وتوصل لل Normal

Example: Malaria

Subtypes of intermittent

1. Quotidian

Description: If paroxysms of intermittent fevers occurs per day.

e.g. Double quotidian

2. Tertian

Description: if intermittent fever occurs on alternates days يوم اه ويوم لا

3. Quartan

Description: When 2 days intervene between consecutive attacks يوم اه ويومين لا

Example: Kala azar

4- Relapsing or Cyclic

Description: Short periods of fever & short periods of normal 3 او 4 ايام وتختفي

Example: Brucellosis, Obstructive jaundice

RELATION TO HEART RATE :

1. Every 1 C rise in temperature lead to increase HR by 10-15 beats/minutes

2. Tachycardia out of proportion to fever :

- Every 1 C in temperature lead to increase HR by **more than** 15 bears/minute

- **Causes:** -Carditis: Rheumatic -Diphtheric - Thyrotoxicosis

3. Every 1 C in temperature lead to increase HR by less than 10 beats/minute

Causes: 1. Viral 2. Typhoid 3. Meningitis

Respiratory Rate

Method of measuring:

It's seldom possible to count respiration rate accurately if the patient is aware (voluntary control interrupt involuntary control)

اعمل نفسك بتعد ال pulse وعد ال respiratory movement ف دقيقه كامله

• Normal resting respiratory rate:

14-20/minute (faster in infants up to 44. it's slower in elders)

• **Tachypnea** (increased respiratory rate) >20/min

• **Bradypnea** (decreased respiratory rate) <12/min

NB: RR to HR =1:4 normally

The Head

A) Facies:

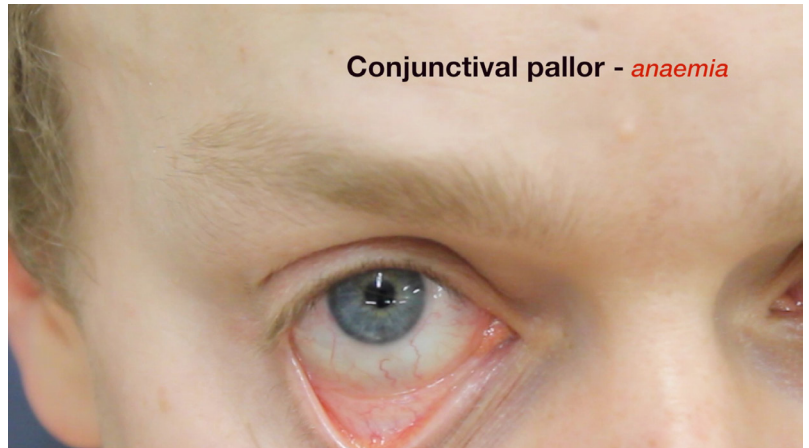
- **Moon Face:** (rounded, plethoric, acne vulgaris, hirsutism in female)
في حالة ال Cushing Syndrome مش بنشوف اذنه
بيحصل للناس اللي بتاخذ Steroid Therapy زى حالات :
Rheumatic carditis , Bronchial Asthma

B) Complexion البشرة: Pallor, Jaundice, Cyanosis, Butterfly rash

البشرة ليس لها لون وانما مكونة من 3 الوان

- **Brown** ... from Melanin.
- **Yellow** ... from Carotene
- **Red** ... from Hemoglobin
- # **Jaundice:** gives yellow color.
- # **Cyanosis:** gives blue color.
- # **Pallor:** as normal color
but minus redness.

Conjunctival pallor - anaemia



1 - Pallor: (absence of redness)

* Sites of Examination:

- Conjunctiva.
- Inner aspect of Lips & Tongue.
- Skin of the face.
- Nails.
- Palm creases.

* Causes of Pallor:

- a- **Decrease Hemoglobin:** - quantitative: in Low Cardiac Output or Shock
or - qualitative: in Anemia
- b- **Toxemia:** as in Infective Endocarditis.
- c- **Edema of the face:** as in Nephrotic Syndrome.
- d- **Racial Pallor:** as in Far East.

Q / ايه اللي يشبه ال Pallor وليس Pallor ؟

- Albinism
- Vitiligo: البهاق

Q / ال Pallor يظهر احسن فى ال Skin ولا ال Mucous Membranes ؟ وليه ؟

In Mucous Membranes, due to absence in melanin and carotene
Melanin and carotene cause masking of Pallor in the Skin

Q / ليه ال Pallor فى ال Conjunctiva عليه اختلاف ؟

Because Trachoma is endemic in Egypt and cause whitish membrane as pallor, but Trachoma affects the upper eye lids mainly and Pallor is seen in the lower eye lids .

2 - Jaundice:

Definition: Yellowish discoloration of the skin and mucous membranes
due to elevation of serum level of Bilirubin > 2.5 mg %

- **Normal level of Bilirubin: 0.8 - 1.2 mg %**
- **If (1.2 - 2.5 mg)% :** Subclinical or hyperbilirubinemia .

Sites of Examination:

- the lower fornix of Sclera in the day light .

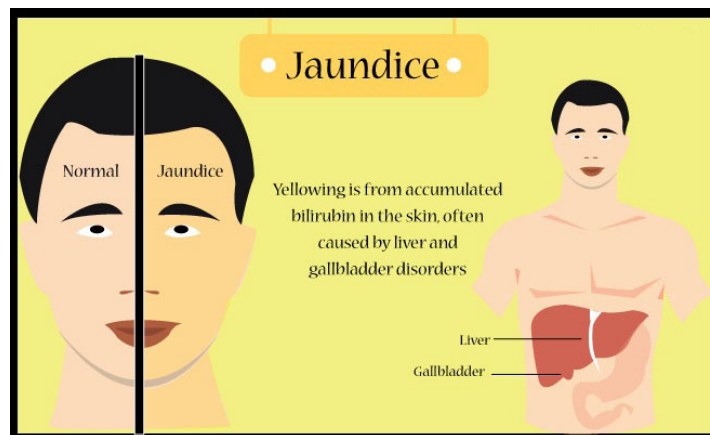
لو بالليل ؟ شغل لمبة نيون او اى ضوء ابيض بس الاصل انك تشوفه بالنهار

- Soft palate

-Drum: with auto scope

Types of jaundice:

	Obstructive J	Hemolytic J	Hepatocellular J
Serum	Increase Direct Bilirubin (Conjugated)	Increase Indirect Bilirubin (Unconjugated)	Increase Direct & Indirect B
Eye	Olive Green	Lemon Yellow	Orange Yellow
Stool	Pale	Dark	Pale
Urine	Dark	Normal, darken on stand	Dark



Q / ليه نشوفه فى ال Sclera ؟

Because Sclera rich in Elastin which has high affinity to Bilirubin

Q / Sclera is avascular .. bilirubin ؟

By Diffusion

Q / ايه الحاجات اللى تعمل ما يشبه ال jaundice وليست jaundice ؟

-**Hyper carotinemia:** in palm and sole **not present in the Sclera.**
فى اللى بياكل جزر وطماطم كتير او مش بيحصل عنده metabolism of carotene

- **Black race.**

- **Renal Failure & Uremia.**

- **Myxedema.**

- **Xanthomatosis.**

- **Atebrin.**

3 - Butterfly Rash: (Localized Pigmentation on the cheeks)

* **Brown:** as in - Pellagra (cause dermatitis)
or - Pregnancy (Chloasma gravidarum) .

* **Red:**

- **Bright red (well marked):** as in Photo sensitivity e.g. SLE

- **Dusty red:** as in Hypertensive stage of Mitral Stenosis (Molar Flush).

* **General Pigmentation:**

- Familial or racial.
- Addison's.
- Pellagra.
- Hemochromatosis.
- Rheumatic Fever.



4 - Cyanosis:

Definition: Bluish or purplish discoloration of the skin and mucous membranes due to elevation of reduced Hemoglobin **> 5 g %** in the arterial blood of the underlying capillaries.

Central cyanosis		Peripheral cyanosis	
Blood ejected from heart (or lung) already contains more than 5gm% reduced Hb (hypoxic hypoxia)		Blood ejected from heart is normal (normal amount of reduced Hb (stagnant hypoxia))	
Causes			
A- Cyanotic lung disease: 1) Asphyxia. 2) High altitude. 3) Pulmonary A-V fistula. 4) Lung diseases: - COPD, fibrosis, collapse, Massive consolidation, Pneumothorax or Pulmonary embolism B- Congenital Cyanotic H. dis. With Rt. To Lt. Shunt: 1- Fallot's tetralogy 2- Eisenminger's C- Polycythemia. D- False (chemical) cyanosis: Met-Hbaemia: cong. / nitrites Sulph-Hbaemia: sulpha or bacteria		A- Generalized decreased blood Flow: 1- Polycythemia: increased viscosity. 2- Marked decrease in C.O.P. 3- systemic venous congestion: (RVF & cardiac Tamponade) 4- shock B- Localized decrease in blood flow: 1 - Cold temp. 2- Peripheral circulation disturbance (Raynaud's, Burger's, venous thrombosis & Arterial occlusion)	
Examination			
	Central cyanosis	Peripheral cyanosis	
Site	All the body: Skin, conjunctiva, inner lips & tongue (and as in peripheral) (Tongue is cyanosed)	Skin of peripheral parts: Tip of fingers, hands, tip of nose, ears, outer lips (Tongue is normal)	
Hand	Warm (peripheral V.D.)	Cold (peripheral V.C.)	
Warming	No effect	Cyanosis improved	
Oxygen	Improves cyanosis No effect (in pulmonary causes only)	No effect	
PO2	Decreased arterial and venocapillary blood	Decreased in venocapillary but normal venocapillary blood in arterial blood	
Clubbing	±	-ve	
Polycythemia	+	-	

N.B: All central cyanosis patients have blue nail bed .

N.B: Central and Peripheral cyanosis may occur together in the same patient as in : Polycythemia and Cardiogenic Pulmonary Edema.

Q / How to unmask the peripheral cyanosis in present of central cyanosis?

A/ the patient hand will be cold not warm.

Q/ What are the causes of Central cyanosis in the lower half of the body only?

A/ In cases of :

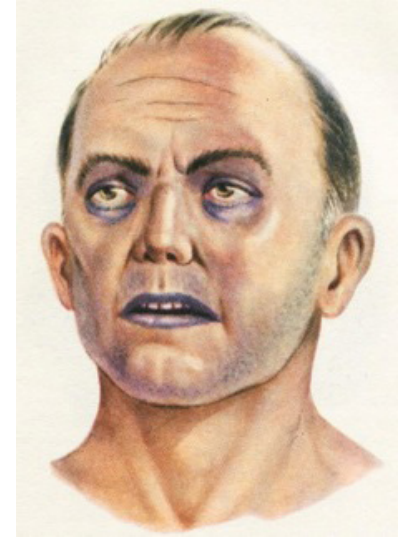
- PDA with reversed shunt ... (Eisenmenger's Syndrome)
- PDA with Coarctation of Aorta.

طبيب ايه اللي يعمله في ال Upper Limb only ؟؟

Transposition of Great Arteries. نفس الاسباب لكن مع وجود

س/ ليه اللسان افضل مكان لرؤية ال cyanosis ؟

- Has no autonomic fibers.
- Highly vascular.
- Continuous exercise.
- Warm organ.
- In a closed chamber



C) Individual Organs:

1 - Eye:

المفروض نعرف كل اجزاءها والمشاكل اللي بتحصل في كل جزء وايضا الامراض المسببة لها

- * **Eye Brow:** Loss of hair outer 1/3 in myxedema /leprosy.
- * **Eye Lid:** Ptosis, Puffiness, Retraction in thyrotoxicosis
- * **Eye Ball:** Exophthalmos, Enophthalmos, Sunken eye.
- * **Sclera:** Jaundice, Blue sclera
- * **Conjunctiva:** Pallor, Conjunctivitis, Sub Conj. Hge, Vit. Deficiency.
- * **Cornea:** Opacity, Kayser Fleisher ring (in Wilson's Disease).
- * **Pupil:** Irregular, Mydriatic, Miotic (as in Horner's Syndrome).
- * **Lens:** Cataract (as in Diabetes), Ectopic subluxation Lens (as in Marfan's \$)
- * **Iris & Ocular Tension.**
- * **Fundus Examination.**
- * **Xanthelasma** (yellowish eruption at inner side of eye lid): associated with hypercholesterolemia.

Causes of Puffiness of the eyelid:

- Myxedema.
- Nephrotic Syndrome.
- Angioneurotic حساسية
- Chronic Cough: specially with COPD.
- Superior Vena Cava Obstruction.
- Constrictive Pericarditis.
- Cardiac Tamponade (No drainage)
- Excessive Sleeping.
- Excessive Crying.
- Infection.
- Trauma.



2 - Mouth:

Angular stomatitis in Iron deficiency anemia and decrease vit B2

Teeth separation in acromegaly losing in DM

* **Mucous Membranes:** Pallor or Cyanosis.

* **Tongue:** glazed red tongue اللسان احمر واملس

* **Enlargement** of papillae strawberry tongue in scarlet fever

* **Breath:** Bad Odor (Halitosis).

Causes of glazed red tongue:

Decreased cell division of lingual mucosa. (Degeneration is normal but Regeneration is slower):

- Anti-Cancer drugs.
- Liver Failure.
- Hypovitaminosis: B1, B12
- Iron or Folic acid deficiency.

Causes of Bad Odor:

a. Ammonical: Renal Failure.

b. Alcoholic: Alcoholism.

c. Acetone: Diabetes.

d. Foeter Hepaticus: Hepatic Failure.

e. Foiled smell: suppurative lung diseases.

f. Other Causes: Bad Oral hygiene, Dental Pyorrhea (pus), Tonsillitis, Pharyngeal Pouch, Pyloric Obstruction, Dyspepsia, Gastro-Colic Fistula.
Palate high arched palate in marfan's syndrome.

3 - The Nose:

A- **Redness on tip of the nose:** alcoholism.

B- **Depressed nasal bridge:** Congenital or Traumatic.

C- **Working ala nasi:** Pneumonia or nervousness.

D- **Large nose:** Congenital or Acromegaly.

E- **Discharges**

4 - The Ears:

A- **Large ear:** Congenital, Acromegaly, Myxedema

B- **Small ear:** Down \$

C- Foreign body in the external meatus.

D- Discharge materials and Spider nevi.

5 - Lips:

A - **Color:** Pallor or Cyanosis.

B - **Cheilitis:** Painful lib fissures caused by malnutrition or with Crohn's disease.

C - **Cheilosis:** lib fissures caused by iron and vit. B2 deficiencies and candida infection.

6 - Teeth:

A - **Discoloration:** poor hygiene, tobacco smoking, lead poisoning.

B - **Loosing of teeth:** D.M.

C - **Wide spacing inbetween:** Acromegaly.

D – Dental caries and tooth extraction.

7 – Tongue:

A – **Color: blue** (Cyanosis), **Pale** (anemia), **Black** (iron therapy)

B – **Atrophy**: Degeneration is normal but regeneration become slower as in:

- Liver Failure. - Anti-Canceric drugs.
- Iron, Vit. B12 or Folic acid deficiency.

C – **Moisture**: Dry in dehydration.

D – **Strawberry tongue**: in Scarlet Fever.

E – **Scrotal or fissured tongue**: in Acromegaly and Down \$.

F – **Macroglossia and Microglossia**.

The Neck

- A. **General examination**: Scars, Rashes, Tenderness or Deformity.
- B. **Neck Veins Examination**
- C. **Thyroid Enlargement**.
- D. **Lymph node examination**.
- E. **Position of the Trachea**.
- F. **Rigidity**.
- G. **Pulsations: Arterial, Venous, Suprasternal**.

1-Neck Veins

1-General properties of neck vein

A-Capacitate

معناها ان السعة الكليه بتاعتها اكبر من كميه ال fluid اللي فيها يعنى يتسع المزيد
يبقى كده ال fluid اللي فيه هيملى الجزء التحتانى بتاثير ال gravity
والجزء الفوقانى هيسقيد بالصفه الثانيه ان ال

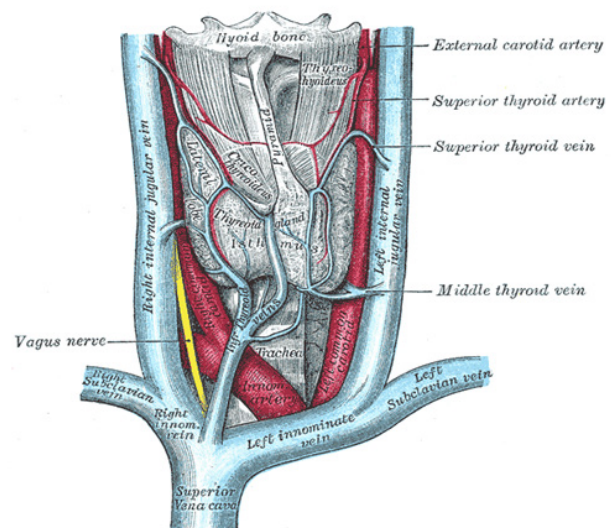
B-Vein is collapsible

فهتلاقى الجزء الفوقانى collapsed والجزء التحتانى يستقيد بالصفه الثالثه ان ال

C- Vein is distensible

- Junction between distended part and collapsed part called upper level of distension of neck vein
- The mean of vein collapsed (it contain minimal amount of blood not able to distend the vein)

2-Anatomy of Neck V



IJV & EJV

Internal jugular v	External jugular v
1- Deep to sternomastoid 2- Has no valves 3- Doesn't pierce the deep fascia 4- Rt internal jugular extend on direct continuity to SVC	1- Superficial to sternomastoid 2- Has valves 3- It pierce the deep fascia of the neck 4- Rt external jugular make an angulation in SVC

Rt internal jugular V on direct continuity with SVC

Lt internal jugular V connect to SVC by Lt innominate V that extend horizontally above the aortic arch

NB -all jugular veins have the same upper level of distension نظريه الاوانى المستطرقه
(communicating vessels theory)

-the bottom of all jugular veins is the same at level of angle of the lous (0 level)

-vertical distance between angle of lous and the level of center of rt atrium = 5cm in all body position

How to examine the NV

NV act as Manometer reflect the changes of pressure of Rt atrium
so if Rt atrium Pr increase the upper level of distension of v increase والعكس

-which is better for examine IJV or EJV?

IVJ is better due to

- a- Having no valves
- b- No piercing of deep fascia so no kinking
- c- EJV is liable to external compression
- d- IJv is in direct continuity with rt atrium

-which is better Rt IJV or Lt IJV?

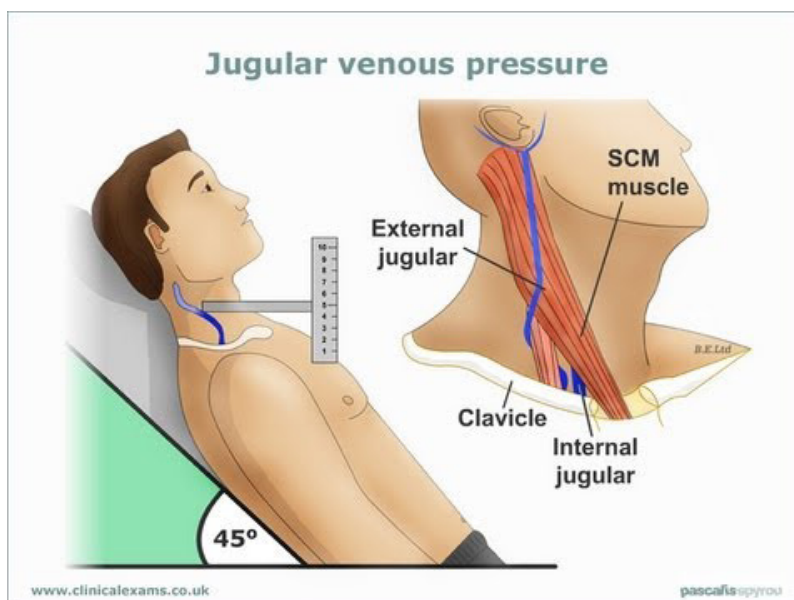
Rt IJV is better as

- 1- In direct continuity with SVC so it near more than EJV
- 2- The Lt is crossed by the arch of aorta making compression over it

-EJV is visible but IJV not visible so the sternomastoid m conduct its pulsation
هستدل عليه بال

the highest point of pulsation mean upper level of distension because collapsed part not pulsate

-sternomastoid conduct pulsation of IJV and carotid artery so we must differentiate between them



Carotid artery & IJV

Carotid artery	IVJ
a-In ant triangle of neck (above) اكثر مكان مش only b-felt better than seen c-Pulsatile 1 wave in cycle - prominent wave is out-ward الحركة القويه للخارج -no updown movement (لانه ملوش level) d- Not changeable with maneuver	a- In post triangle of neck (only) اكثر مكان مش only b-Seen better than felt c- Wavy 2 wave in cycle-inward الحركة القويه الرئيسيه للداخل up down movement d- Changeable with maneuver 1-Position زى الزجاجه اللي فيها مياه لما تحركها 2-Compression لو ضغط على النبض تختفى 3-Respiration لما تاخذ نفس تهوى لان ال-ve pressure فالنبض يختفى انما لما تطلع نفس ال +ve pressure يزقها فالنبض يظهر 4- Valsalva (لما بتحزق) lead to increase intrathoracic pressure so v more distended 5- Hepatojugular reflux

Hepatojugular reflux: intra-abdominal pressure يزيد لو ضغط على بطن العيان
lead to squeeze hepatic blood to ivc to rt atrium so p in rt atrium increase so IJV become more distended
بتضغط بقوة متوسطه مقدرها (35mm) بتحددها الاول بجهاز الضغط لحد مايدك تتعود وتقدر تقيمها لمدته دقيقه

-Normal during compression level of pulsation increase less than 4 cm then decrease again during compression because Rt V accommodate this increasing in venous return. so if Rt V pressure is high the level of pulsation increase more than 4 cm not decrease again during compression because Rt V not accommodate the increasing of VR

-In hepatic v thrombosis (budd chiari syndrome) level of pulsation not increase

EXAMINATION**1 - venous pressure****Defintion:**

1- laboratory def: the pressure inside the jugular v measured by Catheter in the lab at level of angle of louis.

why measured at level of angle of louis?

because pressure in IJV is gravitation pressure

يعنى القاع بتاع ال v هو

gravity لان كل الطبقات الدم اللي فوقه ضاغطة عليه ب اعلى Pr

Why is pressure measured when patient is sitting at 45°

لان تحت 45 درجه بيتدى تاثير الجاذبيه يقل تمام لحد مايختفى فحنا حددناها باعتبار انها زاويه بدايه

2-clinical def: is vertical distance in cm between the angle of louis and upper level of distention of IJV

وعبرنا عن الضغط بالمسافه بالسنتيمتر لان كل مازاد عمود الدم فى الارتفاع كل ماطبقات الدم الزياده ضغطت على القاع وزودت الضغط لذلك ارتفاع عمود الدم بال سنتمتر

IJVP= unit is cm blood or cm H₂O

Normal JVP from 0 up to 3 cm blood

High JVP > 3 cm low < 0

How to measure?

vertical at angle of louis المسطر الصفر ونحط الصفر بتاع المسطر
وتشوف ال upper level of pulsation فين وتقيس
- اى زاويه تبين ال upper level of pulsation قيس من عندها وتغيير الزاويه لا يؤثر على النتيجة
- الانسان الطبيعى بيان عنده ال upper level عند 20 الى 30 درجه
لوميلت العيان اقل من 20 درجه ومفيش حاجه بابنه بيقى low JVP
طب ليه بيخلونا نقيس عند 45 درجه فى الرواند ؟
لو واحد طبيعى قاعد 90 درجه ال upper level هبقى تحت ال clavicle فمش هشوفه
لو نام flat ال upper level هيخش جوه دماغه فمش هشوفه
فاختاروا الدرجه اللى مابيههم عشان اشوفه
خلى بالك من كلمه vertical يعنى عمودى على مستوى الارض not perpendicular
لو انت بتقيس لازم العيان تكون راسه مسنوده على مخدات لانه relaxation of sternomastoid
عشان تقدر تتقل ال wave

Causes of Low JVP

(اقل الحنفية) **Decrease venous return in**

1-Hypovolemia as sever (Hge, vomiting, polyuria, diarrhea, burn, dehydration)

- Cause of High JVP (congestive NV)

a- قفل البلاعه

1- **Cardiac cause** (SVC obs- TS- RVF- Constrictive pericarditis- Pericardial effusion- PS- PH)

2- **chest** (any cause increase intrathoracic pressure, compress Rt A lead to increase Rt Atrium Pr as COPD, Massive pleural effusion, Tension pneumothorax)

3- **abdomen cause** as tense ascites compress on diaphragm cause high intrathoracic pressure

b- فتح الحنفية

1-Hypervolemia (Excessive blood transfusion, Excessive IV fluid, Renal failure)

2-Hyperdynamic circulation (Anemia, Thyrotoxicosis, Pregnancy)

Causes of Non-pulsating congestive IJV

1-SVC obs: (thrombosis causing complete obst) > لانك فصلتها عن مصدر ال wave

2- **Severe** Rt VF, severe pericardial effusion (marked distension so no range of movement)

3- **Mediastinal syndrome**: causing complete obstruction

CVP: it is the pressure at the center of rt atrium measured by

القسطره والمسطره

$$CVP = JVP + 5cm$$

5cm mean distance between angle of louis to center of Rt atrium قيمه ثابتة

Normal CVP from 5 to 8 cm blood

timing	Late diastole (pre systole)		Early systole		Late systole	Early diastole
Rt atrial event	Atrial contraction(A) Then relaxation (X)		1-Tricuspid cusp elevation(C) 2-continue atrial relaxation and downward displacement Of TR ring		Atrial filling Due to VR(V)	Atrial emptying (Y)
Rt atrial pressure	++++++ Then ----		+++ Then -----		++++++	-----
wave	A	X	C	X	V	Y

3 cm (from sternal notch)
+ 5 cm (from right ventricle to sternal notch)
8 cm H₂O jugular venous pressure

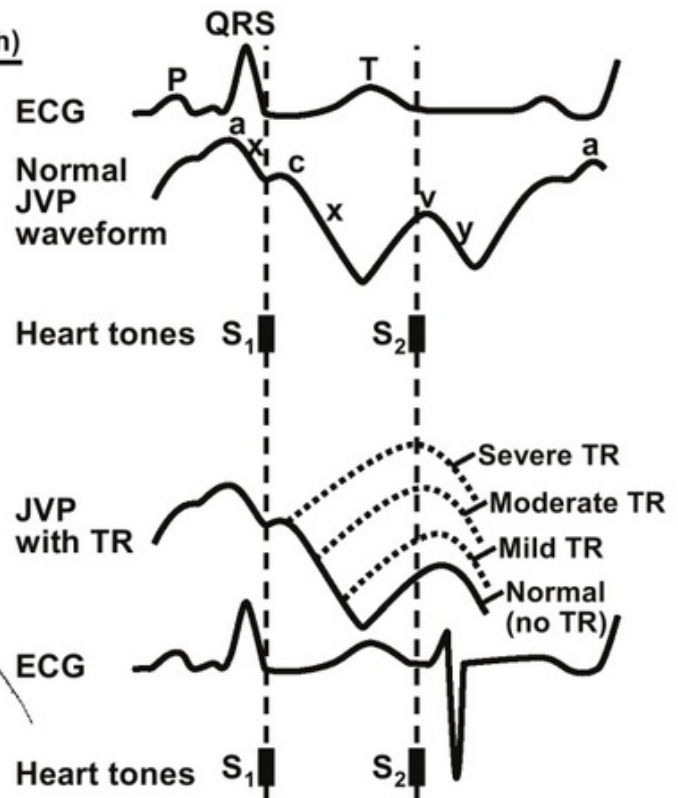
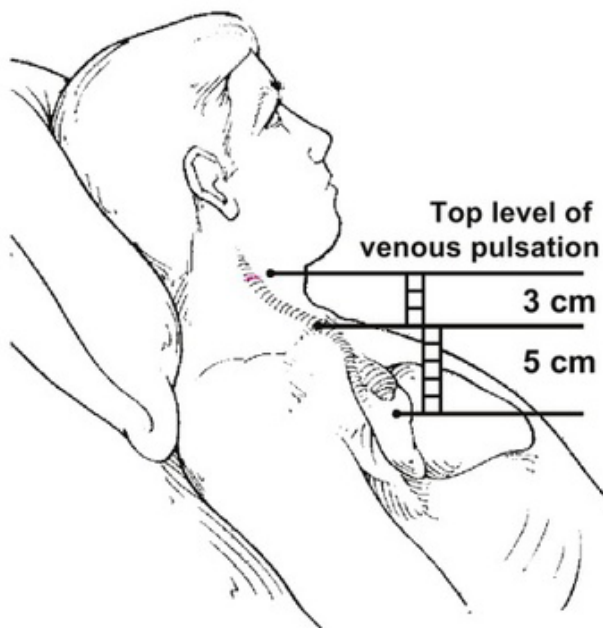


Illustration of jugular venous pressure (JVP). ECG, electrocardiogram; TR, tricuspid regurgitation.

- 1- **+ wave** تاخذ الحرف الاول من اسم الايفنت اللي بيعملهم
 2- **- waves** ياخوا الحرف الاخير من اسم الايفنت اللي بيعملهم
 3- **-waves early but +waves is late**

اسئله فى ذهنك

1- Atrial relaxation

بيحصل فى اول ال syst , وال atrial filling بيحصل فى اخر ال syst هل ده معناه انهم منفصلين عن بعض؟ وهل ده معناه ان v wave المغروض تبقى فى اول ال syst؟

ج- لان ال At filling شغال طول فتره ال syst لكن ال atrial filling اللي بيحصل فى اول ال syst بيحصل on relaxing atrium يعنى الضغط بيقل بعد مال atrium يحصل له maximal relaxe اى نقطه دم هتدخل هتزداد الضغط يبقى ال x wave atrial filling on relaxing atrium
v wave atrial filling on relaxed atrium

2-x wave

حقيقه تبدأ من presyst ويتكمل فى ال early syst فكه ال فى ال pre syst هنسميها **z wave** يعنى سببه ال beginning of atrial relaxation

وال **x** سببها continuation of A relaxation

بس ال **x** لها mechanism تانى انها بتحصل فى ال syst يعنى V contraction
فال Rt v هيقتصر ويشد ال Tricuspid valve لتحت فال capacitance of Rt A increased
فالضغط يقل فى ال Rt atrium فيعمل x wave

ثانيا ال RV مش بيقتصر من اول لحظه عشان فى الاول عندنا Isometric contraction phase
فطاقه ال contraction هتعمل increase V pressure فتزق Tricuspid valve ل فوق

lead to increase Rt atrium Pr cause **c wave** lead to closure of Tricuspid valve
so **c wave** caused by closure of Tricuspid valve

3- y wave

vent filling = atrial emptying = rapid and reduced emptying

Rapid emptying

يعنى ال AT بيفضى بسرعه اسرع من دخول الدم فيه يبقى الضغط هيقبل يعمل y descent
in reduced emptying

الدم بيخرج ببطىء ابطىء من دخول الدم فى ال VR فالضغط يزداد يعمل y ascent

Examination of waves

1- systolic collapse

بما اننا بنحس ال pulse فى ال early systole
so x descent is simultaneous with the pulse

A-with **normal waves**

B-with **giant A wave**

Causes: TS "Most common" - PS - PH

Mechanism: the Rt atrium contract against resistance

C- with **deep x deep y (fredrichs sign)**

Cause constrictive pericarditis

Mechanism:

atrium ينقبض بصعوبه فيحصل انقباض ببطىء "قلب داخل صمغ"
ولما يحصله **relax** يحصل بسهولة لان فى حاجه بتشد لبره فيحصل

rapid relax and incomplete

ال **y** سببها ان بيحصل **Rt v relaxes rapid and incomplete so Rt v filling become incomplete**
so atrial emptying become rapid and incomplete

2-systolic expansion + wave simultaneous with pulse

عشان تعمل syst expansion لاما تاخر ال A لاما تدر ال V + نخليهم giant

a- giant V wave

causes

1-TR (regular)

فى اللحظه اللي بتعمل فيها atrial relax عندك regurge يعنى رغم وجود relax الدم بيرتجع ويفضل الضغط + وبما ان ال TR occur
pansystolic يبقى كده الدم بيرجع من اول لحظه فى ال syst

2-AF (irregular) no atrial contraction so no A wave, no atrial relax so no X wave

إذا في 30% محبوسين في ال atrium يعني لما يحصل filing ال atrium ال هيملي على مليون يعني أكثر وبدري

b- giant syst A wave (cannon A wave) شفوى فقط

occur when the Rt atrium contract against contracting Rt ventricle (closed tricuspid)

a-usual junctional rhythm

ال pacemaker موجود في ال AVN فال A,V بيتكهربوا في نفس اللحظة وطبعاً القوة اللي تحت اكبر وهتقل ال TV

b-occasional

1- A&V dissociation in a-complete HB

2-Vent tachychardia

3-Artificial pacemaker

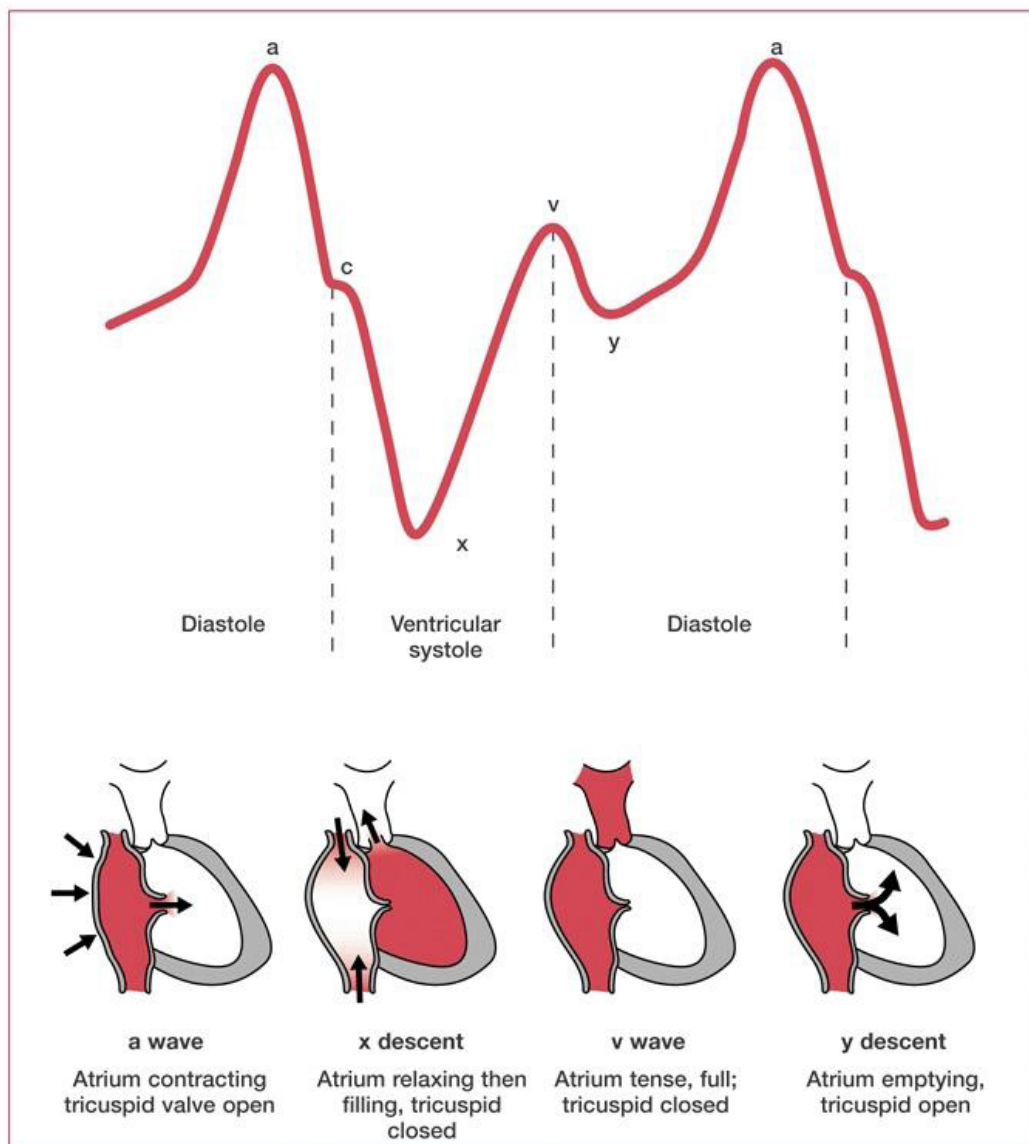
يعنى الكهريا اللي جايه من فوق مش بتوصل تحت فيطلع focus in V فمممكن تصادف ان ال A and V يضربوا قصاد بعض احياناً

الخلاصة

لو لقيت **syst expansion** يبقى احتماليين

Regular is TR

Irregular is AF (syst expansion with absent A wave) (وتقوله الحاله فيها)



Relation to respiration

1- expiratory filling

- a- **normal** تم شرح ال mechanism قبل كده
 b- in **COPD** (exaggeration of normal)
 (forced expiration) لان العيان بياخذ نفس بقوة ويبطئ النفس بقوة

2- inspiratory filling (kausmaul's sign)

causes

- a- **Constrictive pericarditis**
 b- **Pericardial effusion**
 c- **Sever Rt V failure:**

Rt V pressure is high في الثلاث حالات دول ال
 لما تخذ نفس ال VR اللى داخل ال NV يزيد لكن ال Rt V مش قادر يستحمل هذه الزيادة
 اذن ال NV يملأ اثناء ال inspiration

3-Inspiratory no change: in

- 1- congestive HF
 2- SVC obstruction

2- Rest of Neck examination

- الرقبة عبارة عن 4 عواميد وكورتين
 1-neck 2- trachea 3- carotid 4- muscles **عواميد**
 1-lymph node 2- thyroid **كور**

Carotid

Comment on

1-Visible carotid pulsation (NV) **corrigan sign** occur in

- 1-most common in aortic regurge
 2-normaly in thin people
 3- in causes of big pulse volume

2- Carotid thrill (shudder)

Caused by AR or atheroma or aneurysm

Because AR increase filling of LV. increase BF to carotid (functional stenosis) cause Murmur felt as thrill

لو لقيت **thrill** لازم تتأكد انه مش **AS** (**propagation from A1 area**)

Trachea

Trachea more shifted if the cause unilateral bulge of sternomastoid called **trails sign**

muscles

Overaction of accessory m of inspiration (sternomastoid and scalni, trapezius)
 which inserted in clavicle and 1,2 ribs so during contraction
 descend of diaphragm more effective يشدوا ال thoracic cage
 So it contract with inspiration if presence of inspiratory problem)
 هتشوفها ازاي هتبص على ال clavicle هتلاقها طالعها نازله

Lymph node

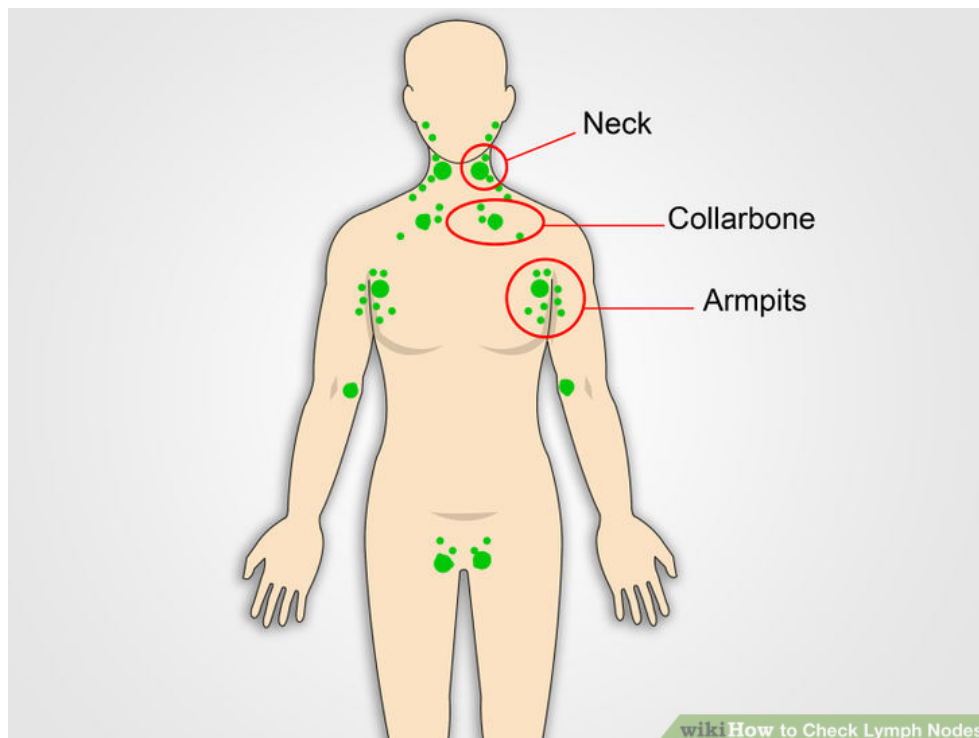
Group of cervical LN

1-Horizontal group (submental, submandibular, preauricular, post auricular, occipital)

2-Vertical group**a-Superficial group** superficial to sternomastoid**b-Deep group** deep to sternomastoid**c- Scalene LN** under insertion of sternomastoid (large in bronchogenic carcinoma)**d- Supraclavicular** (the left called **Virchow's** which enlarge in GIT malignancy)**e-Post cervical** behind sternomastoid**Axillary group** ant axillary –post axillary-lateral axillary (against humerus) apical- central**LL group** Inguinal + femoral**Comment on** Site, Size, Surface, Consistency, Tenderness, Relation to surrounding
liver and spleen لازم تفحص *generalized lymphadenopathy* لو لقيت العيان عنده**Causes of generalized lymphadenopathy clinical**

- Lymphoma
- Leukemia
- Sarcoidosis
- TB
- Tertiary syphilis
- Serum thickness

الحاله مش بتتشخص *clinically* لازم *biopsy* لو كتبت تشخيص الدكتور هيعرف انك غاشش
هتكتب *case of general lymphadenopathy for DD*

**Thyroid**لاتفحص الا لو لقيت فيها *goiter***Comment on****Inspection** (Site, Size, Shape, Effect of Tongue protrusion, Effect of Deglutition)**Palpation** (Surface, Consistency, Effect of Deglutition, Thrill-lower border, Relation to Surrounding)**Percussion** (Percuss Manubrium)

Auscultation

اللى عليك عملى واللى بينزل هو ال **Graves disease**

Its description is

Site: in lower 1/2 of front of neck

Size: 8cm

Shape: better fly

Move: up and down with deglutition because it is closed in pretracheal fascia

لما بتبلع طبيعى ال trachea بتتحرك فوق

(cyst thyroglossal بعكس Not move with tongue protrude)

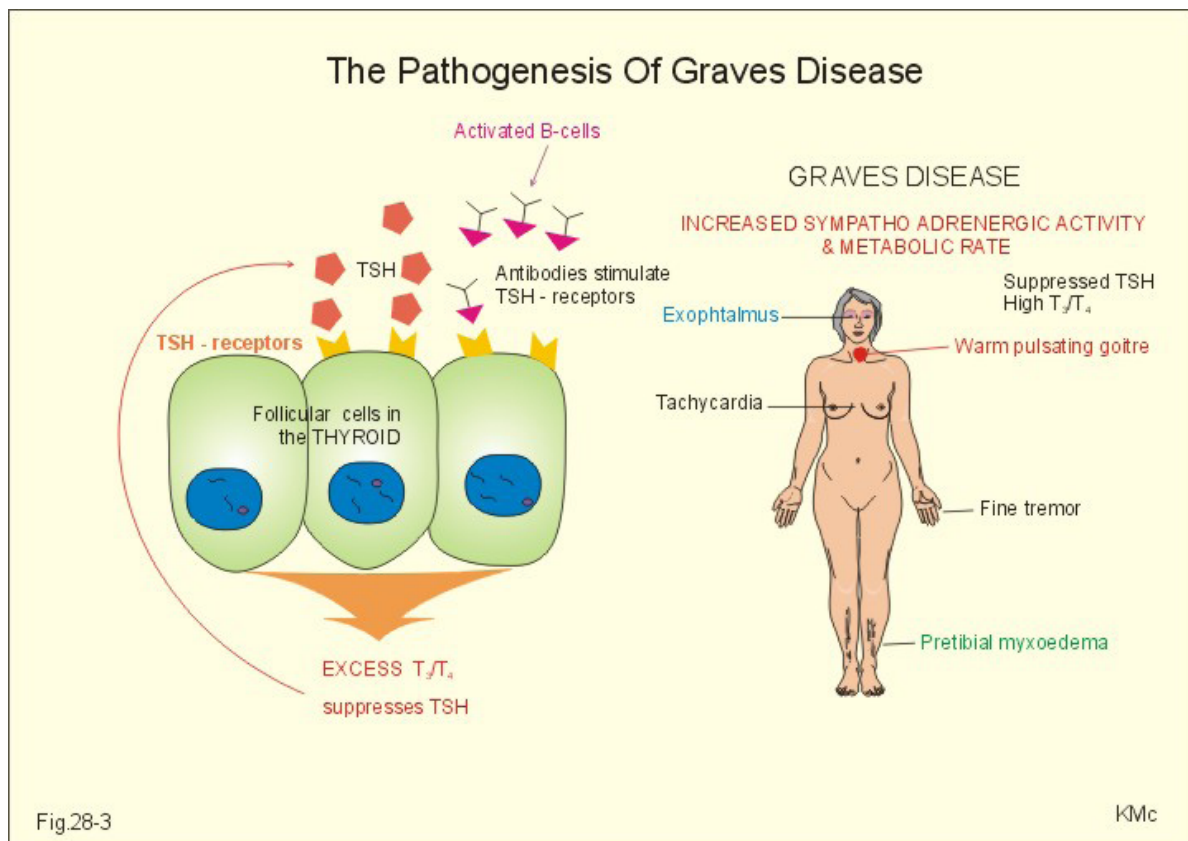
Smooth surface –firm- thrill if highly vascular

Lower border not felt

Free relation to surrounding

Resonance manubrium

Bruit if highly vascular mass



Upper Limb

1- Appearance and size of hand & fingers: spade hand in Acromegaly.

2- Temperature:

* **Warm Hand:** Fever, Central Cyanosis, Hyperdynamic Circulation.

* **Cold Hand:** Low Cardiac Output, Peripheral Cyanosis.

3- Sweating: as in Thyrotoxicosis & Toxemia.

4- Joint abnormalities: as in Rheumatic Fever.

5- Lymph Nodes: Axillary & Epitrochlear L.Ns.

6- Edema: (Cardiac, Renal, Hepatic, Nutritional, or Allergic).

7- Nails Examination:

a. Color:

- **Pallor & Cyanosis:** راجع ال Complexion
- **Yellow:** in Nicotine Stains & Yellow nail Syndrome (peripheral edema, bronchiectasis, plural effusion)
- **Cherry Red:** in CO gas poisoning.
- **Terry's nail:** distal half is brown but proximal part is pink: in Cirrhosis & Chronic Renal Failure.

b. Spooning: in severe chronic Iron Deficiency Anemia.

c. Capillary Pulsation: in Aortic Regurg.

d. Splinter (linear) Hemorrhage: in Trauma & Infective Endocarditis

e. Clubbing:

The Clubbing

toxic or hypoxic

hypoxia cause proliferation of nail bed and edema and vasodilation cause clubbing

Mechanism ان مش ده ال

RBC mature ان ال

Reticulocyte اسمها Maturation ال قبل ال

Platelet mature ال عارفين ال

Megakaryocyte اسمها ال قبلها اسمها

بتمشى فى الدم لحد ماتوصل لل lung

Extensive lung disease BV is dilated small bv فتعملها تكسير, وتتفتر الناس بقى اللى عندهم

فتعدى من الرئه وتمشى فى الجسم لحد ماتتحتشر فى ال

Nail bed and release growth factor causing clubbing (**blue clubbing**)

and occur in Rt to Lt shunt because blood not reach to lung

Nail Angle normally 160 درجة

Grades of Clubbing

Grade 1: cause obliteration of nail angle with preserved striation on nail

window test بنأكده بال

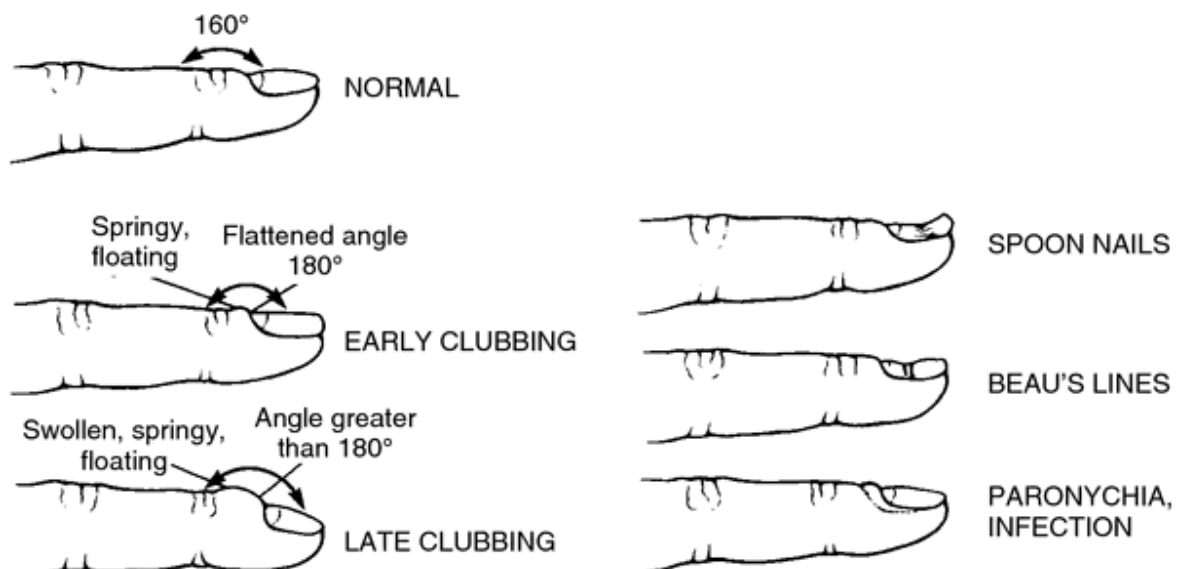
Grade 2: longitudinal and transverse convexity increase and loss of normal striation زى منقار البغبان

grade 3: depth of distal phalanx more than depth of distal inter phalangeal joint زى عصايه الطبله

Grade 4: not clubbing (bronchial carcinoma cause subperiosteally proliferation)

pulmonary osteoarthropathy

Grade 0: minimal clubbing not close nail angle diagnosed by **fluctuation test**



Causes of clubbing

1- CVS: *toxic* in subacute bacterial endocarditis

hypoxia in congenital cyanotic heart disease

2-Chest causes: in *Primary pulmonary interstitial lung fibrosis

*Suppurative lung diseases not in TB

*Bronchogenic carcinoma & methothlioma

3-Abdominal cause: -primary biliary cirrhosis *not in liver failure*, bilharzia, intestinal polyposis
inflammatory bowel syndrome, steatorrhea

other causes

Familiar -Occupational -Traumatic

Pseudoclubbing in graves' disease due to Ag and Ab complex

Abdomen & Chest

see their chapters.

Lower Limb

1 - Edema: same as Upper Limb.

2 - Color: Cyanosis.

3 - Deformity: as in Duchene Myopathy & Marfan's Syndrome.

4 - Blood Pressure difference between Upper & Lower Limbs: (Hill's and Reversal of Hill's)

5 - Nails of the toes: as in upper limb.

Oedema

Definition: means abnormal accumulation of fluid in the interstitial tissue due to disturbed mechanisms of formation of interstitial fluid.

Comment on:

1. Unilateral or bilateral
2. Pitting or non pitting
3. level (extent)
4. Tenderness.
5. Examination of serous membranes.

Examination of oedema:

1. Below the knee pressure for about ½ minute over bony prominence (Posterior to medial malleolus, dorsum of the foot and the chin of tibia)
2. Pinching test over the thigh
3. Pedou-orange over the anterior abdominal wall.
4. Examine back for sacral edema.

D.D. of generalized edema

A- Cardiac oedema: with *congested neck veins*.

- Bilateral.
- Painless.
- Pitting.
- Dependant.



- Before ascites.

Dependent: appears in the dependant parts of the body:

- **Ankle oedema:** in ambulant Pt.
- **Sacral oedema:** in recumbent (or bed ridden) Pt. (When oedema is very great; it may affect whole LL, genitalia, abdomen, chest and even the face “generalized anasarca”)

Pitting

Before ascites: always L.L oedema precedes ascites **except** in 2 conditions

where ascites precedes (**ascites precox**):

- pericardial effusion & constrictive pericarditis.**
- T.R. or T.S.** due to marked congestion of liver

Bilateral

- Unequal oedema occurs in case of deep venous thrombosis (DVT).
- It may be on one side in Pts. preferring to sleep on one side.

B- Renal oedema:

Occurs firstly in eye lids, generalized, **pitting marked in the morning.**

A-Nephritic: in acute nephritis	B- Nephrotic:
• Oliguria • Hypertension (Na & water ret) • Haematuria • Epith & red casts in urine	• Heavy albuminuria • Hypoproteinaemia • Generalized oedema • increased cholesterol

C- Hepatic oedema:

In advanced liver cirrhosis + other signs of L.C.F.

D- Nutritional oedema: + other signs of nutritional deficiencies.

- Sever malnutrition.
- Sever malabsorption.
- Sever anaemia.

E- Angioneurotic oedema: allergic.

- Non pitting – Acute - Localized (lips, eye lids, larynx) or generalized
- History of other allergic manifestation: eczema., asthma.
- Family history of allergy.
- Rapid response to anti allergic measures.

Localized edema

1. D.V.T.

2. Lymphedema:(non pitting) Filariasis - Post mastectomy.

3. Varicose veins: Mainly in L.L.+ signs of varicosities.

4. Orthostatic edema: Mainly in L.L + diurnal variation ± Occupational Factors

5. Angioneurotic edema

Affecting the face (lips) asymmetrically, with history of allergy. Of sudden onset, self limited

For Local Examination: see the related chapter

تم بحمد الله وفضله